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CLINICAL TYPES OF THERAPEUTIC PNEUMOTHORAX AND THEIR SIGNIFICANCE

J. W. CUTLER, M.D.

PHILADELPHIA

Of all forms of treatment in pulmonary tuberculosis, therapeutic or artificial pneumothorax occupies an increasingly important position and today it is practiced in approximately 50 per cent of all cases of tuberculosis. Rist considers it the most remarkable advance made thus far in the treatment of pulmonary tuberculosis. It has undoubtedly considerably improved the prognosis of certain very common forms of this disease that formerly were regarded as invariably hopeless.

From the clinical point of view, one may consider several types of artificial pneumothorax: total collapse (complete collapse, compression pneumothorax), incomplete collapse, selective collapse (hypotensive pneumothorax, partial pneumothorax, expansile pneumothorax), simultaneous bilateral pneumothorax, and alternating pneumothorax. It is my purpose in this paper to describe in brief these various forms and to emphasize the clinical significance of each as well as some of the more important indications.

TOTAL COLLAPSE

When Carlo Forlanini first practiced pneumothorax in 1884, he assumed that for the pneumothorax to lead to cure it should be complete—that is, both the healthy and the diseased part should be collapsed—and that the intrapleural pressure should be such as to assure absolute and uninterrupted immobilization of the entire lung. Only in this way could there be any healing of the tuberculous process. Consequently when pneumothorax was indicated the lung was shrunken to a more or less elongated hemispherical or sausage-shaped mass (figs. 1 and 2). Under such circumstances, treatment could be instituted only when the contralateral lung was free of disease. Dyspnea, general discomfort, pleural effusions and reactions and displacement of the mediastinum were frequent and troublesome complications, and pneumothorax gained little headway.

As time went on, clinical experience forced the conclusion that absolute immobilization of the entire lung was not essential to healing. It was observed time and again that, even with an imperfect or incomplete collapse, because of adhesions (fig. 3) notable results were attained. Furthermore, the marked beneficial effects of the pneumothorax that were so frequently observed at the very beginning of treatment occurred at a time when total collapse had not yet been established.

From the Henry Phipps Institute, University of Pennsylvania.

Pondering over these clinical facts, Ascoli in 1912 made the next most important contribution to collapse therapy when he urged the abandonment of complete collapse in favor of partial collapse, or, as he termed it, hypotensive pneumothorax; that is, pneumothorax accompanied by low manometric readings or negative pressure. It was not long before this teaching took root and operators in different parts of the world soon applied this newer conception of pneumothorax therapy in their practice. With inevitable refinements and developments in technic the hypotensive pneumothorax of Ascoli became the selective collapse of today, a term first used by Barlow and Thompson in 1921.

SELECTIVE PNEUMOTHORAX

The primary object of selective collapse as it is understood today is to maintain uniformly and continuously complete collapse of the diseased part of the treated lung and at the same time permit full function of the healthy part (figs. 4, 5, 6 and 7).

The mechanics of selective collapse is relatively easy to understand. When air is introduced into the pleural space under negative pressure and the patient subsequently studied under the fluoroscope, it will be observed that the air has a tendency to localize itself around the diseased area of the lung regardless of whether the disease is located in an upper or a lower lobe. This is a natural phenomenon and takes place of its own accord, provided the factors necessary for its production are not too violently disturbed. The explanation for this phenomenon is usually given as follows:

The tuberculous tissue having lost its elasticity is less able to resist the pressure of the induced pneumothorax and with each breath expands less and less. On the other hand, the healthy part of the treated lung with its elasticity unimpaired can and does resist the pressure of the induced pneumothorax. With each inspiration it expands freely to the chest wall and recedes on expiration. On inspiration, in order to make room for itself, the healthy part drives the air in front of it and forces it into the path of least resistance, which is toward the diseased area. This expansile action of the healthy part by repeatedly compressing and forcing the imprisoned air in the pleural cavity toward the diseased area little by little completely collapses the diseased part and then keeps it collapsed indefinitely. Given enough time, the constant hammering of this expansile force will cause satisfactory collapse of a diseased area in spite of apparently obstructing adhesions, and unyielding cavities will slowly give way and become completely obliterated without subjecting the patient to the dangers and disadvantages of complete collapse of the entire lung.

The phenomenon of selective collapse is thus viewed as an automatic mechanism, the resultant action of the

simultaneous tendency of the diseased part to collapse and of the healthy part to expand.

Selective collapse has greatly widened the indications for pneumothorax therapy and has made it possible for patients with extensive bilateral disease to participate in its benefits. It minimizes respiratory disturbance, prevents circulatory distress and throws the least amount of work on the contralateral lung. It has reduced the incidence and seriousness of pleural effusions and is undoubtedly the procedure of choice.

The technic necessary for its production and maintenance is much more exacting than for complete collapse and depends for its success on close attention to the refill interval, the quantity of air administered, manometric readings, and routine fluoroscopic studies before each refill. Even under skilful guidance the healthy part of the lung may become adherent to the chest wall and the pleural space subsequently lost.

SIMULTANEOUS BILATERAL PNEUMOTHORAX

With the principle of selective collapse established, the next logical development in pneumothorax therapy was simultaneous collapse of parts of the two lungs. Ascoli is credited as the first to practice simultaneous collapse. It is undoubtedly the most difficult type of pneumothorax therapy to carry on successfully and requires the closest attention to detail. It is applicable only in a limited number of cases, and when applied judiciously the results are satisfactory. The best type of case is one in which the lesions are not too far advanced and are definitely limited to the upper lobes or when there has been a recent spread of the disease in the contralateral lung, necessitating prompt intervention. Such patients can be helped materially by simultaneous bilateral pneumothorax. There need be no dyspnea or other signs of discomfort. In some instances the patients can be self supporting while under treatment and within reasonable limits be permitted to lead normal active lives.

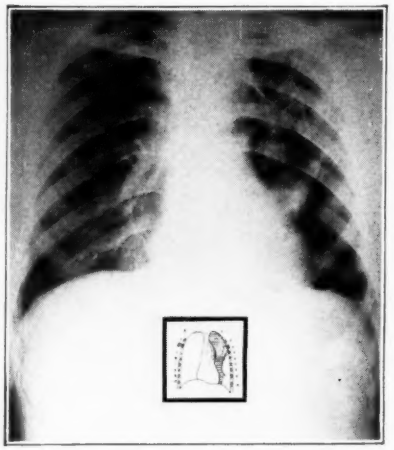

Fig. 3.—Incomplete collapse of left lung. In some cases an ideal collapse is not possible because of numerous adhesions; yet the collapse established is sufficient from the clinical standpoint to close cavities and permit healing. Such a pneumothorax should not be interefered with. The patient has had his collapse maintained for over six years, during which time he has been self supporting and leading a normal active life. The shaded area in the diagram represents collapsed lung.

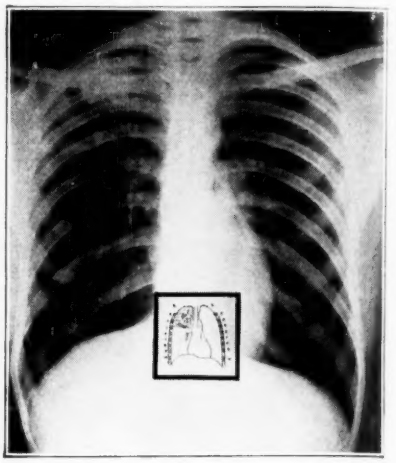

Fig. 4.—Advanced tuberculosis of the right upper lobe.

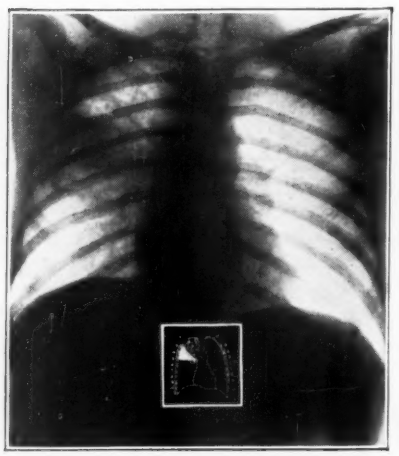

Fig. 1.—Advanced tuberculosis of right upper lobe.

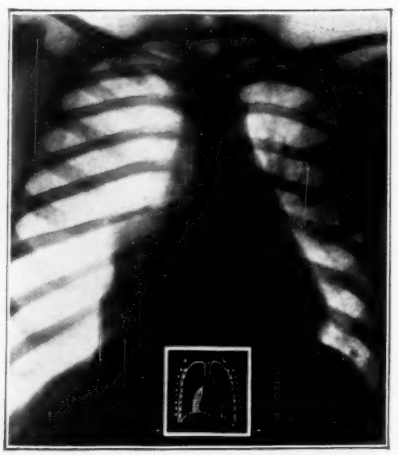

Fig. 2.—Complete collapse of right lung (same case as in figure 1). The diseased and healthy areas are equally collapsed and the lung is shrunken to a sausage-shaped mass lying close to the heart (shaded area in diagram). This type of therapy often results in a reactivation of a quiescent lesion in the contralateral lung and is happily becoming obsolete.

The following is an interesting example:

CASE 1.—S. S., a man, aged 23, came under observation, Dec 19, 1929, with acute pulmonary tuberculosis involving the righ upper lobe and complicated by severe hemoptysis. Therapeuti pneumothorax was instituted, December 21, and the patien responded well. Bleeding ceased almost instantly and withi a month the temperature was normal. His recovery continue uneventful and by September of the following year he resume full duties as a practicing attorney. Everything continued well with the patient self supporting until January 1933, practically three years after his first breakdown, when a bad cold developed, with resultant spread of the tuberculosis in the "good" or left lung and the sudden appearance of two small cavities in the mid-lung field. Because of the unusually good result obtained with pneumothorax on the right side and the prospect of a complete anatomic cure and the natural apprehension of the patient, it was not deemed desirable to discontinue the first pneumothorax. Accordingly a second pneumothorax was established on the left side, Jan. 23, 1933. Within two weeks the patient was back on his job with no symptoms of tuberculosis and no discomfort from the doublesided pneumothorax. Fifteen months has now gone by and the disease in the left lung is undergoing slow absorption. The collapse is continued on both sides and the patient is happy and hopeful. No other form of therapy could have solved the patient's problem so effectively and so pleasantly. The only inconvenience is the frequency of refill. Figure 8 depicts the state of collapse of the lungs shortly after the bilateral pneumothorax was established.

The chief disadvantages of simultaneous collapse are the difficulty of management and the frequency with which refills must be given. Before deciding on such therapy one should consider carefully the advantages of alternating successive pneumothorax and of pneumothorax on one side and phrenic evulsion combined with scaleniotomy on the other. A decision is often difficult to reach and involves considerable judgment based on past experience. Unfortunately, the results of phrenic evulsion and scaleniotomy are not so certain as is that of successful collapse by pneumothorax, and in times of emergency or when there is doubt, and time is an important element, the

decision is often forced in favor of simultaneous bilateral pneumothorax in spite of its disadvantages. However, this treatment has a definite place in collapse therapy and greatly widens its usefulness.

ALTERNATING PNEUMOTHORAX

Alternating or successive pneumothorax, as its name implies, is the successive collapse of first one lung and then the other by artificial pneumothorax. Usually the first lung is not permitted to expand until it has been collapsed for a year or more. This type of therapy is especially indicated in patients who develop contralateral disease during pneumothorax treatment or who have bilateral disease equally distributed when first seen.

Alternating pneumothorax, introduced by Forlanini in 1911, is on the increase largely because therapeutic pneumothorax is now much more widely employed and because the majority of patients subjected to collapse therapy have considerable disease in both lungs. Some operators prefer alternating pneumothorax to simultaneous bilateral collapse as a safer and simpler procedure, and there is much to support such a view.

When alternating pneumothorax is indicated, the most involved side is collapsed first and a careful watch kept on the contralateral lung. Very often the untreated lung will improve with improvement in the collapsed lung, especially if the patient is kept in bed. Progression of disease in the untreated lung, however, may be a very serious complication and at times may require heroic measures, especially when the disease in the "good" lung is spreading rapidly and is accompanied by severe hemoptysis and high fever. In such cases the operator may be forced against his will to discontinue the first pneumothorax and institute collapse in the "good" side. Case 2 is illustrative.

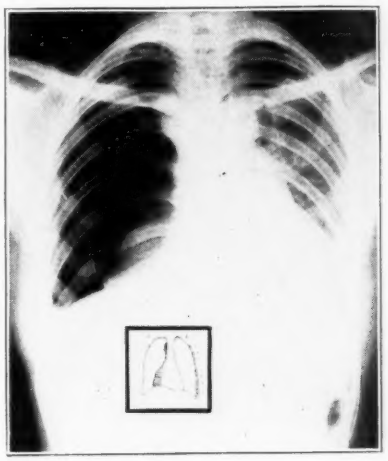

Fig. 7.—Selective collapse (same case as in figures 4, 5 and 6). On deep expiration the healthy lower lobe undergoes marked collapse and gives a striking illustration of the freedom of movement of the healthy part of the treated lung under selective collapse therapy.

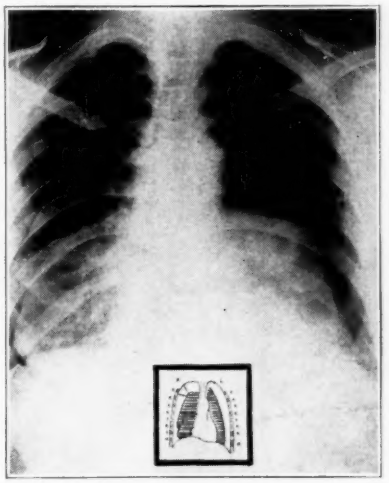

Fig. 8.—Bilateral artificial pneumothorax. This patient is self supporting and leads a normal active life in a large city. The shaded area in the diagram represents the collapsed lung.

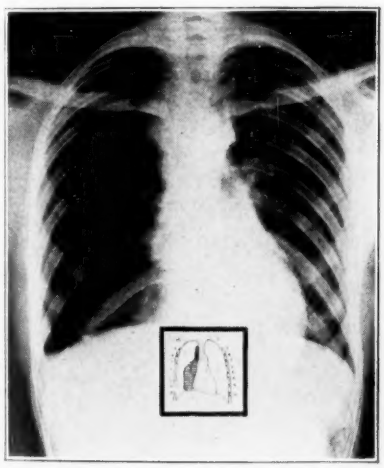

Fig. 5.—Selective collapse of right lung (same case as in figure 4). The diseased upper lobe is completely collapsed, while the remainder of the lung, which is healthy, is permitted to function freely. (See figures 6 and 7.) This type of therapy greatly widens the indications for collapse therapy, so that from 50 to 75 per cent of all tuberculous patients may enjoy its benefits. The shaded area in the diagram represents the collapsed lung.

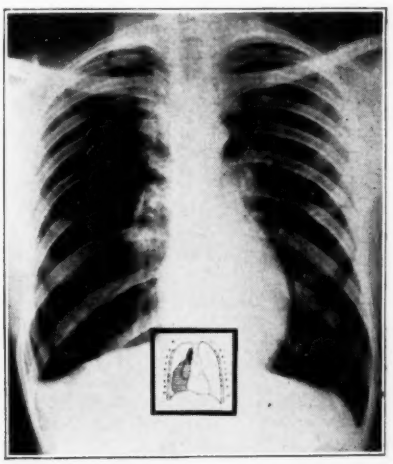

Fig. 6.—Selective collapse (same case as in figures 4 and 5). On deep inspiration the healthy lower lobe expands almost to the chest wall, while the diseased upper lobe remains collapsed as before.

CASE 2.—H. S. a man, aged 22, came under observation in February 1931, at which time he was acutely ill with tuberculosis of the right lung complicated by severe hemoptysis. Therapeutic pneumothorax was promptly instituted and a dramatic result obtained. The hemoptysis ceased, the cough and fever disappeared, and within two weeks the patient was well on the road to recovery. He gained rapidly in weight and within three months returned to active life. In January 1932, thirteen months after he first took ill, a series of colds developed, with the sudden appearance of considerable disease in the "good" lung. This soon subsided under bed rest and the patient again was apparently on the road to recovery when severe hemoptysis developed, complicated by high temperature, Aug. 2, 1932. This necessitated immediate intervention by pneumothorax. The hemoptysis ceased and the temperature returned to normal, and once more the patient's outlook on life brightened. For a short time simultaneous bilateral pneumothorax was maintained, but it was too severe a treatment for this patient. There was considerable dyspnea. Accordingly, the pneumothorax in the old or right side was discontinued and replaced by a phrenic evulsion, August 26. Twenty months has now passed and the patient's condition has steadily improved. He has no symptoms of tuberculosis, the sputum is negative and there has been no recurrence of the bleeding. Both lungs continue to clear, and there is no dyspnea. The patient has received a refill to the left lung every two weeks.

2104 Pine Street.

Eyestrain. — The connection of headache with eyestrain was first noted by medical writers in the latter part of the eighteenth century, but the morbid condition responsible for the majority of headaches was described by Donders (1818-1889) of Utrecht, who in 1850 was first to point out that inaccurate optical adjustment of the eyes causes not only diseases of the eye but many other conditions, including headache, nervousness, indigestion, etc. Donders, however, like all persons engaged in pioneer work, did not realize the full clinical importance of his discovery. It was left to S. Weir Mitchell and William Thompson to place the anomalies of refraction on a firm scientific basis—perhaps one of the most important accomplishments in the realm of medicine and surgery.—Gordon, B. L.: Importance of Cephalalgia in Ocular Diagnosis, *Arch. Ophth.* **11**:769 (May) 1934.

SUPERIOR PULMONARY SULCUS TUMOR

FURTHER OBSERVATIONS, WITH REPORT OF TWO ADDITIONAL CASES

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In his most recent article dealing with the clinical entity of tumor characterized by pain, Horner's syndrome, destruction of bone, and atrophy of hand muscles, Pancoast [1] has said, "The name of 'superior pulmonary sulcus tumor' has been given it because this term implies its approximate location and a lack of origin from lung, pleura, ribs or mediastinum. It is possible that this new designation may be changed again with a better knowledge of the histopathology of the growth." Opportunity to examine autopsy material from a case of this sort has convinced me that, at least in this instance, the tumor arose from the mucosa of the terminal bronchioles in the apex of the lung, and that the name "primary carcinoma of the pulmonary apex" might be appropriate. In another case presenting the same clinical manifestations I have been studying the effects of prolonged, fractionated short wavelength roentgen therapy.

REPORT OF CASES

CASE 1.—*Clinical History.*—W. C., a white man, aged 55, American, a bottler, referred to the medical department of the University Hospital by Dr. F. S. Baird of Bay City, Mich., July 25, 1933, complained chiefly of pain in the right arm and shoulder. The present illness dated from the previous October, approximately ten months before, when he first noticed a dull aching in the muscles on the inner aspect of the right elbow. The pain had become progressively worse since its onset, was more or less constant and was more severe at night. It was aggravated by motion and gradually involved the muscles of the shoulder girdle, accompanied by weakness and areas of numbness. The usual methods of treatment failed to give relief, except that hot applications occasionally produced some benefit. Five months before entrance the patient had all his teeth extracted in an effort to remove the cause of the pain, without avail. At times when the pain was very severe as much as 2 grains (0.13 Gm.) of morphine would not relieve him. Since the onset of the present illness he lost 15 pounds (6.8 Kg.), which represented about 8 per cent of his total body weight. General weakness and malaise also developed during this time. The past history was unimportant except for an illness that had been diagnosed as "pleural pneumonia" fifteen years before; for many years he had had a morning cough productive of whitish phlegm. For an indefinite period he had slight dyspnea and palpitation on exertion and a sense of constriction at the base of the neck.

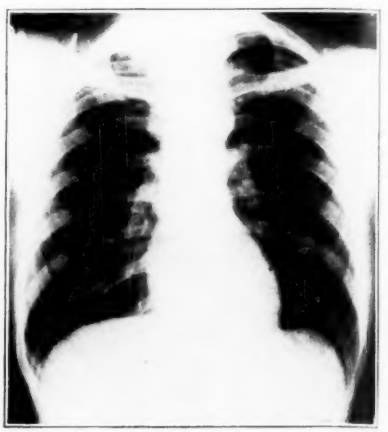

Fig. 2 (case 1).—Chest, demonstrating definite growth in the right apex.

Seven years before admission he had an attack of what was diagnosed angina pectoris, but there had been no similar symptoms since that time. There had never been any hemoptysis. The family history was entirely irrelevant.

Physical Examination.—The following relevant data were obtained on admission: The skin over the right lateral thorax showed areas of hyperpigmentation due to applications of a hot water bottle. There were no other skin changes. There was a typical Claude Bernard-Horner's syndrome on the right with ptosis, contracted pupil and anhidrosis. All the muscles of the right shoulder girdle, arm and forearm showed considerable atrophy, and fibrillary tremors. Tenderness in the right axilla could be elicited by deep pressure. The biceps, triceps, radial and ulnar periosteal reflexes were hyperactive, and there was definite weakness of the muscles of the right arm. There were no definite objective sensory disturbances except hyperesthesia of the inner aspect of the right arm. The possibilities suggested by the neurologic examination were, first, progressive spinal muscular atrophy; second, amyotrophic lateral sclerosis, and, third, a cervical rib. The opinions of the orthopedic surgeon and neurosurgeon were that the pain was radiculitis and that there was a definite tumor mass that was probably a neurofibroma and did not arise from bone. The systolic blood pressure was 130, the diastolic 80, with only slight variations on several readings. There was slight clubbing of the fingers. Urinalysis was repeatedly negative. The hemoglobin was 75 per cent (Sahli); the red blood cell count was 3,650,000 and the white blood cell count was 11,300 per cubic millimeter, with a normal differential formula. Routine Kahn tests of the blood and spinal fluid were negative. No sputum could be obtained for examination.

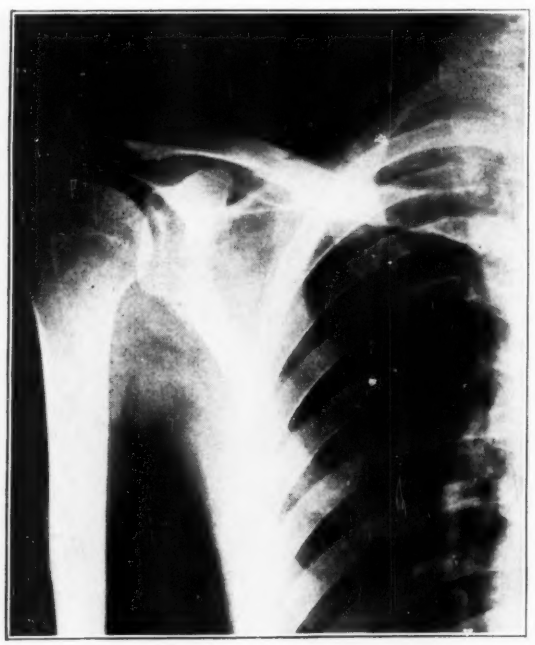

Fig. 1 (case 1).—Shoulder, showing destruction of the posterior half of the right first rib.

Roentgen Examination.—On admission, a study of the right shoulder and the cervical and dorsal portions of the spine demonstrated a dense infiltrative process throughout the apex of the right lung. The vertebral portion of the right first rib was almost completely destroyed (fig. 1). All other structures appeared normal. The possibilities of a primary bone tumor of the rib, a sarcomatous lesion of the pleura at the apex, and pulmonary tuberculosis with rib involvement were considered. Examination of the chest the next day (fig. 2) seemed to indicate the last of these. From an additional chest examination four days later a provisional diagnosis of right superior pulmonary sulcus tumor was made.

Read before the Detroit Roentgen Ray and Radium Society, April 5, 1934.
From the Department of Roentgenology, University of Michigan Medical School.

1. Pancoast, H. K.: Superior Pulmonary Sulcus Tumor: Chairman's Address, J. A. M. A. **99**: 1391 (Oct. 22) 1932.

Clinical Course.—A biopsy of a hard, immovable tumor mass behind the lower lateral border of the right sternocleidomastoid muscle was taken, August 2. The pathologic diagnosis was as follows: "Blood vessel, fascia and small nerve showing diffuse infiltration with carcinoma. Carcinoma spreads diffusely. Shows no evidence of glandular architecture." Dr. C. V. Weller gave the verbal opinion at this time that the neoplasm might be of branchial cleft origin.

At consultation I expressed the belief that the only possible benefit in the light of present knowledge was by a combination of high voltage roentgen therapy followed by radium needle implantation after surgical exposure, which would constitute a thorough test of irradiation.

The patient stated that the pain was so severe that he did not care what risk was taken to relieve him. He readily consented to operation and, August 11, was transferred to the department of thoracic surgery for this. His vital capacity was found to be 3,400 cc. Under local and secondary nitrous oxide anesthesia the right first rib was removed with the idea of implanting radium needles in the tumor. A stony hard tumor surrounded the articular portion of this rib, grossly invading it and infiltrating into the posterior triangle of the neck. There was a tonguelike extension of the tumor downward, separating it from the lateral surfaces of the bodies of the upper thoracic vertebrae. It was found that the roots of the brachial plexus were deeply embedded within the tumor mass and that the bony destruction was considerably greater than that revealed by the roentgen examination. At this point the patient's pulse became weak and rapid and the blood pressure, normal at the beginning of the operation, dropped to zero. Hemorrhage, developing in the surgical field, could not be completely controlled, and in spite of all efforts to revive the patient he died shortly from shock. The main mass of the tumor had been removed and the pathologic diagnosis was as follows: "Carcinoma, largely scirrhous in type, invading connective tissue, fascia, nerves, sheaths of blood vessels and voluntary muscle. The adherent lung was also infiltrated with the same carcinoma and to the same degree, as far as could be determined. The bone marrow of the first rib was largely replaced by carcinoma." Permission for a necropsy was obtained.

Fig. 3 (case 1).—Section of autopsy material with predominantly squamous but some glandular characteristics in the same high power field from the right apex.

Necropsy.—Gross Anatomy: The surgical incision was 19 cm. long, curving from the posterior cervical triangle backward and around the superior angle of the scapula, and downward to approximately the level of the fifth thoracic spine. The upper third of the upper lobe of the right lung had been resected. There was extensive neoplastic invasion of the soft tissues on the right side of the neck, extending to the level of the fifth cervical vertebra. This neoplasm was firm, white and glistening in character. It was situated entirely lateral to the internal carotid on the right side and medial to the skin of the neck. It was patchy in appearance, showing scattered nodules. The left lung and the remainder of the right were perfectly normal. The bronchi were thoroughly explored and showed no evidence of neoplasm arising in them. The greater portion of the right subclavian artery was surrounded by a neoplasm, and all the large nerve trunks were surrounded and compressed by neoplastic tissue. There was hemorrhage into the tissues in the region of the junction of the subclavian and vertebral arteries.

The left suprarenal proper was approximately of normal size. A portion was replaced by glistening, white tissue and

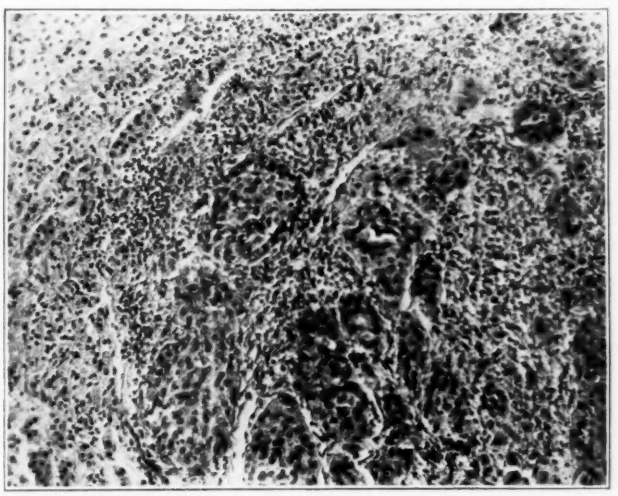

Fig. 4 (case 1).—Section of autopsy material with predominantly squamous but some glandular characteristics in the same high power field from suprarenal metastases.

was completely surrounded by characteristic neoplastic tissue. This mass measured 4 cm. in diameter. The right suprarenal showed a mass of tissue exactly similar to that on the left side. On section there was exposed only a thin layer of suprarenal tissue about the periphery of this mass of neoplasm. The kidneys were entirely normal and showed no malignant changes.

Microscopic Anatomy: There was no evidence of metastases to the central nervous system. The remaining portion of the right upper lobe of the lung showed a well advanced carcinoma. This developed as an adenocarcinoma, capable of forming mucin, but tended to become rapidly undifferentiated and medullary (fig. 3). The first thoracic vertebra showed extensive infiltration of the surrounding tissues, periosteum and bone itself (after decalcification) by scirrhous adenocarcinoma. The suprarenals showed bilateral metastatic medullary adenocarcinoma (fig. 4). The regional and distant lymph nodes showed no metastases.

Dr. C. V. Weller made the following comment: "Clinically this tumor falls in the group designated by Pancoast as 'superior pulmonary sulcus tumor.' In any clinical compilation it can be included in that group. At present, however, this term does not denote a pathologic entity. Since this carcinoma is an adenocarcinoma, it could not have arisen, so far as we know, in branchial cleft remains. Since it is mucin forming, the primary cannot be referred to the suprarenals. Both by direct evidence and by exclusion one is forced to the conclusion that this is of bronchogenic origin."

CASE 2.—*Clinical History.*—S. P., a man, aged 44, American, a chauffeur, referred to the Department of Neurosurgery of the University Hospital by Dr. F. G. Maurer of Lima, Ohio, Nov. 26, 1933, complained chiefly of severe pain in the left arm, shoulder and upper posterior portion of the chest of three or four weeks' duration. The pain radiated down the left arm, generally to the inner aspect of the elbow. He had also noticed increased warmth of the entire left upper extremity and the left side of the face with absence of sweating over this area. The pain was accentuated by cold but had been relieved somewhat by heat and narcotics. Five or six years before admission, after he had been driving in the wind, a left facial

palsy developed, which had improved. There had been an injury over the left eye a few years before, following which there was a drooping of the left upper eyelid. This had increased, however, since the patient had noticed the pain in the arm. Three or four years before admission he had had antisyphilitic therapy for a penile sore. He had been told that on no occasion was his blood or spinal fluid positive. He had had a hacking nonproductive cough for many years but never any hemoptysis. Since the onset of the present illness he had lost 10 pounds (4.5 Kg.), or approximately 5 per cent of his total body weight. The family history was not relevant.

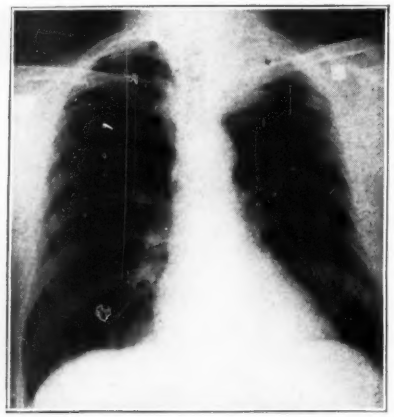

Fig. 5 (case 2).—Chest, showing similarity to figure 1, but in opposite apex.

Physical Examination.—The following pertinent data were obtained: There was a typical Horner's syndrome on the left side. The left side of the face, left hand, shoulder and axilla showed anhidrosis, and these areas were warmer than the corresponding areas on the right. This was confirmed by skin temperature readings which showed a difference of 3 degrees C. between the hands. Neurologic examination showed, in addition, a well sustained nystagmus on lateral deviation to either side, and there was some diminution of convergence on the right. The left angle of the mouth was less well retracted than the right. Biceps and triceps reflexes were present, slightly diminished, but about equal. The abdominal reflexes were diminished, and the achilles jerks were diminished bilaterally. Vibratory sense was diminished on the left and almost absent on the right. There was some ataxia on the heel to knee to toe test, and some swaying in the Romberg position with the eyes closed. Sensory examination showed glove and stocking hypalgesia bilaterally but no other neurologic changes. The impression obtained from the neurologic examination was, first, that of early tabes dorsalis; second, questionable thoracic neoplasm or, an unlikely possibility, spinal cord tumor. There was a palm-shaped area of definite blanching of the skin overlying the left scapula, measuring 8 by 10 cm., with sharply demarcated borders. There was definite clubbing of the fingers. The blood pressure was 130 systolic and 85 diastolic and varied but little on repeated determinations. Urinalysis on entrance and on repeated examinations was negative. Blood studies were entirely normal. Routine Kahn tests of the blood and spinal fluid proved to be negative. A dextrose tolerance test was not abnormal. No sputum could be obtained for examination.

Roentgen Examination.—Routine studies of the chest and spine demonstrated a soft tissue mass with fairly sharply defined outer margins completely filling the arc of the first rib in the left apex (fig. 5). The mass seemed to be more posterior than anterior and there was some stripping of the pleura. A neoplasm of the posterior left thoracic apex was reported. Films of the abdomen showed no abnormal calcifications. Special stereoscopic detail studies of both apexes showed definite loss of bone substance in the neck and head of the left second rib, and the diagnosis of left superior pulmonary sulcus tumor was made.

Clinical Course.—The patient was referred to Dr. F. A. Coller of the surgery department for his opinion regarding therapy, and his reply was as follows: "I feel that the diagnosis is fairly clear. As surgical excision is impossible and as x-ray is the only treatment, I do not see that a biopsy is worth while." Consequently, the patient received daily treatments with 200 roentgens (measured in air), effective wavelength 0.15 angstrom unit, (200 kilovolt peak, 0.5 mm. of copper plus 1 mm. of aluminum), cross-firing the left supraclavicular region from front and back through each of two portals measuring 15 by 15 cm. (fig. 6). Each portal received 4,200 roentgens within a period of twenty-five days from December 5 to 30 inclusive, or a grand total of 8,400 roentgens. During this time the pain was controlled by sedatives or narcotics when needed. The pain became less intense during the course of treatments and on completion it was practically gone, there being merely superficial pain present. The skin temperature changes were disappearing at the time of his discharge, and chest films showed a definite decrease in infiltration in the left apex. The patient was discharged with the advice that if at any time there was exacerbation of the pain chordotomy would be performed.

The patient returned for check-up examination three and one-half months from his previous admission, on March 13, 1934. He had completely recovered from the effects of treatment such as loss of voice and appetite, and the skin which had been denuded had healed. He showed improvement roentgenographically (fig. 7) and clinically, but there was no change in the appearance of the rib destruction. Neurologic examination revealed persistent sympathetic paralysis, but all symptoms and signs including the severe pain were less noticeable. The neurosurgeon's opinion was that high cervical chordotomy should not be performed because the patient was getting along so well. No treatment was given and he was discharged with the same advice as before. Ten days later he returned, stating that for the past several days he had attacks of pain in the left arm and upper left side of the chest exactly similar to those which he first experienced. There was some relief with large doses of narcotics.

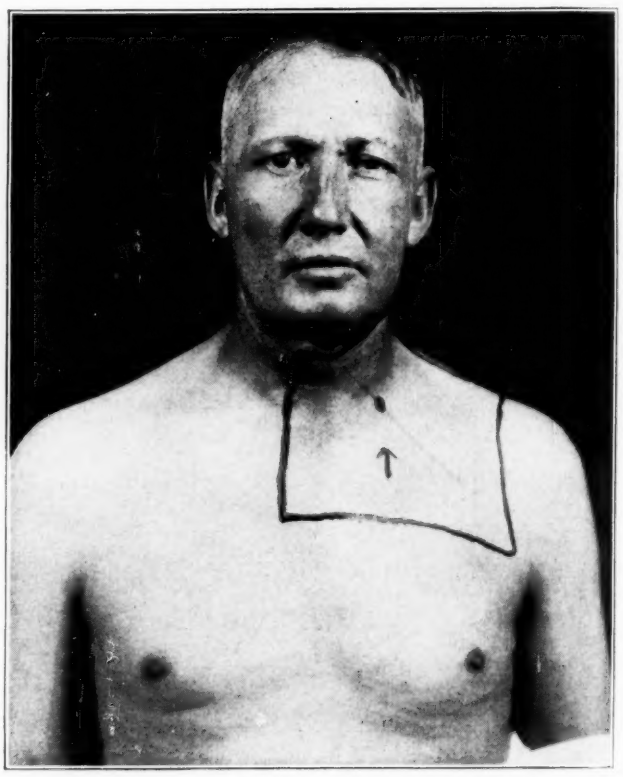

Fig. 6 (case 2).—Appearance before treatment, showing Horner's syndrome with size and location of roentgen portals of entry. (Arrow represents angulation of central ray.)

March 24, a high cervical (third) chordotomy was done with good immediate postoperative condition, and the pain was entirely relieved. On the second postoperative day while smoking he received a small burn of the left middle finger, owing to the loss of temperature sense. On the twelfth postoperative day the patient was entirely free from pain and was discharged. The wound, half of which was in the field of irradiation, was well healed throughout. The relatives were

told that no further radiation therapy would be given and that the prognosis was grave. The possibility that the pain might return (because about 10 per cent of the pain fibers travel up the homolateral side) was also mentioned.

COMMENT

The similarity of the two cases here reported is readily apparent. Even when the symptoms were of less than one month's duration, as in the second case, I believe that they fulfil all the criteria of the clinical entity previously described as superior pulmonary sulcus tumor. The clinical features of this condition represent a definite and striking syndrome quite different from that of the usual primary malignant growths of the lung.[2] The apical chest tumors reported by Henderson[3] do not fall into this particular category. Neither do large lesions of the upper lobe, which may also produce Horner's syndrome.

Fig. 7 (case 2).—Follow-up examination three and one-half months later, demonstrating reduction in infiltration coincident with clinical improvement.

To demonstrate the protean clinical aspect of a carcinoma originating primarily in the lung, Fried[4] describes the case in a man, aged 41, a freight agent, which probably belongs in this group. The onset was with sharp stabbing pain in the right shoulder radiating down the arm with atrophy of muscles, clubbed fingers and Horner's syndrome. The first impression was that the patient had syringomyelia. On subsequent visits the symptoms increased and the diagnosis of a malignant neoplasm was evident. Death occurred three years and eight months from the onset of the first symptoms. At necropsy a primary carcinoma of the apex of the right lung with involvement of the sixth and seventh cervical and first and second thoracic vertebrae was found; the first, second and third ribs were also invaded, and there were metastases to the liver, kidneys, suprarenals, heart, lymph nodes, sigmoid colon, stomach, pancreas, mediastinal lymph nodes, subcutaneous tissue and skull. This case may represent the natural course and duration of the disease, although Pancoast's patients did not live much more than a year.

Tobias[5] has described an "apicocostovertebral doloroso" syndrome with clinical and radiographic evidence of a tumor of the apex associated with intense radicular pain and sympathetic paralysis. He found this syndrome in one case of primary carcinoma of the apex of the lung without biopsy or autopsy and also observed it three times in metastatic or extensive lesions in this region. Pancoast grants the possibility that the lesions in cases 6 and 7 of his group may be metastases from carcinoma of the cervix uteri. I have seen similar cases with metastases in the apex but without the complete clinical and radiologic manifestations.

Robertson[6] feels that the majority of so-called primary malignant tumors of the pleura are in reality metastases or extensions from primary lung carcinomas. Surely his belief is substantiated by the observations in my first case. Not until autopsy material became available were the glandular and mucin-producing qualities of this tumor recognized. Judged on the basis of the biopsy alone, the diagnosis must have been squamous cell carcinoma. Metastases to the suprarenals only are occasionally found in primary bronchogenic carcinoma. This may account for the peculiar type of death which Pancoast described in his patients.

CONCLUSIONS

1. Evidence is presented supporting the view that superior pulmonary sulcus tumor is an atypical form of primary bronchogenic carcinoma.
2. A modification of Coutard's method of intensive deep roentgen therapy failed to control the symptoms of this disease.
3. Chordotomy should be considered as a valuable palliative procedure.
4. Incidentally, wound healing was not retarded by intensive roentgen therapy.

University Hospital.

2. Weller, C. V.: The Pathology of Certain Signs and Symptoms in Primary Carcinoma of the Lung: Illustrative Cases, Ann. Int. Med. **2**: 7[illegible] (Feb.) 1929.
3. Henderson, W. F.: Roentgen Study of Apical Chest Tumors, Am. J. Surg. **8**: 414 (Feb.) 1930.
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THE DIFFERENTIAL DIAGNOSIS OF HYPERPARATHYROIDISM

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Excessive parathyroid secretion, such as occurs with parathyroid adenomas, causes a drain of lime salts from the body resulting in skeletal changes classified as Recklinghausen's disease or generalized osteitis fibrosa cystica. The negative calcium and phosphorus balance is commonly associated with hypercalcuria, hypercalcemia and hypophosphatemia and with skeletal, renal and gastro-intestinal symptoms that together constitute the classic form of hyperparathyroidism. The differentiation of this disease from others involving the bones is important because surgical removal of parathyroid adenomas is usually followed by extraordinary improvement if carried out before advanced skeletal deformities or renal impairment preclude complete restitution of the patient. The differential diagnosis of hyperparathyroidism may be difficult, however. The onset of the disease is usually insidious, the early manifestations are extremely varied, aberrations from the classic picture are common and the most characteristic features may be closely simulated by other diseases involving the bones.

In this study, the problems relating to early recognition of hyperparathyroidism are particularly

emphasized.[1] Four new proved cases are presented. The data in 115 proved cases in the literature [2] have been analyzed to indicate the incidence of initial presenting symptoms and their relative diagnostic significance. The usefulness and limitations of laboratory procedures in the diagnosis of suspected cases are considered.

PRESENTATION OF CASES

Our first case conforms to the classic picture of the disease. Our second case, in which skeletal deformities and renal damage were more marked, exhibited an interesting fall in the initially high serum calcium coincident with the onset of acute uremia. Both patients did very well after removal of a parathyroid adenoma. We are indebted to Dr. Allen O. Whipple for permission to add a third case, under observation for sixteen years. A parathyroid adenoma was removed elsewhere, but the patient subsequently died. We are indebted to Dr. Dana W. Atchley for permission to report a fourth case, interesting because of polycystic kidneys and recurrent attacks of renal colic for twenty-three years, terminating in uremia associated with hyperphosphatemia and normal serum calcium. Two parathyroid adenomas were found at autopsy.

Fig. 1 (case 1).—Right tibia (*A*) before and (*B*) eight months after operation, showing cystic areas filled in.

CASE 1.—C. G., an American salesman, aged 34, admitted, July 10, 1933, complained of constant aching in the right hip, loss of 20 pounds (9.1 Kg.) and weakness. His familial and his past history were irrelevant to the present illness, which began in 1931 with "rheumatism" in both arms. In January 1932, while throwing a ball, he fractured the right humerus in which a roentgenogram disclosed a cyst. The fracture healed in eight weeks, but the pain in the arms persisted. Loss of 30 pounds (13.6 Kg.) and weakness developed, with slow response to cod liver oil and calcium lactate. Dry mouth, polydipsia and polyuria were first noted about this time. In July 1932, dull pain in the lower part of the back, the right hip and leg, with a limp, developed. Roentgenograms disclosed cysts in the pelvic bones. Six months later, after a slight trauma, he noted a painless bony swelling just below the right knee. About this time he found that for the first time in fourteen years he needed a larger hat size. In May 1933 he complained of nervousness, exertional dyspnea and transitory sticking pain in the chest. Episodes of nausea and vomiting set in, and constipation became more pronounced. After spending the better part of two months in bed, he sought admission.

When first seen, he appeared chronically ill, anxious and somewhat confused mentally. There were no skeletal deformities except shortening and limitation of flexion of the right arm due to malunion of the old fracture. A nontender bony swelling could be palpated along the anterior surface of the right tibia 6 cm. below the knee. The teeth were missing except for markedly carious lower incisors. A questionable resistance could be felt near the lower pole of the thyroid gland on the right side. No other abnormalities were noted. Laboratory examination on admission showed: erythrocytes, 3,760,000; leukocytes, 15,200, with 76 per cent neutrophils; hemoglobin, 72 per cent (Sahli); blood Wassermann test, negative; a faint trace of albumin but no sugar or Bence-Jones protein in the urine. The phenolsulphonphthalein excretion was normal. The basal metabolism rate was +3 per cent. The QT interval in the electrocardiogram was 0.36 second with a heart rate of 80. The results of chemical examination of the blood are recorded in table 1. Roentgenograms of the skeleton revealed a generalized osteitis fibrosa cystica, with moderate decalcification and cysts in the pelvis, both tibias, the left femur, five ribs and several metatarsal bones (fig. 1). The skull showed characteristic fine mottling. There was a shadow of calcium density in the abdomen suggesting calcification in a horseshoe kidney (fig. 2). Balance studies showed increased excretion of both calcium and phosphorus in the urine. The patient required an intake of about 1 Gm. of calcium a day to maintain calcium equilibrium (fig. 3).

Exploratory operation, August 17 (W. B. P.), disclosed a parathyroid tumor partially embedded in the posterior aspect of the lower part of the right thyroid lobe, which was removed. Further inspection revealed no other masses. August 20, tingling developed in the toes, fingers and tip of the nose with occasional irritability, relieved by administration of calcium chloride and parathyroid extract (table 1). The Chvostek and Trousseau signs were always negative. August 28, the patient felt so well that he was discharged. Four months after operation he was working hard, had gained 30 pounds and felt very well. Slight pain in the right hip was still present after walking. Roentgenograms showed definite signs of recalcification, most pronounced in the skull, where the grainy appearance of the vault was definitely less marked. Eight months after operation his condition was excellent. Results of postoperative blood analyses are shown in table 1.

The tumor was an encapsulated, soft, lobulated, yellowish gray mass measuring 2.7 by 1.6 by 1.0 cm. and weighing 3.5 Gm. Microscopic examination (Dr. F. M. Smith) revealed a parathyroid adenoma composed chiefly of syncytium-like groups of large cells containing large oval, darkly stained nuclei with abundant pale granular cytoplasm, closely packed or arranged in small alveoli enclosing pink-staining colloid-like material. A few small nests of water-clear and rose-red cells were seen, but no oxyphile cells of Welch.

CASE 2.—M. W., an Irish housewife, aged 53, was referred by Dr. F. R. Bailey, June 28, 1932, for admission as a probable case of hyperparathyroidism. There was no history of familial or childhood bone disease. In 1913, during her third pregnancy, and again in 1917, renal colic developed, relieved by

1. Historical and general considerations are omitted here. They are discussed fully in the following excellent monographs: (*a*) Mandl, Felix: Klinisches und Experimentelles zur Frage der lokalisierten und generalisierten Ostitis fibrosa, Arch. f. klin. Chir. **143:** 245, 1926. (*b*) Barr, D. P., and Bulger, H. A.: The Clinical Syndrome of Hyperparathyroidism, Am. J. M. Sc. **179:** 449 (April) 1930. (*c*) Hunter, Donald and Turnbull, H. M.: Hyperparathyroidism: Generalized Osteitis Fibrosa, Brit. J. Surg. **19:** 203 (Oct.) 1931. (*d*) Lièvre, J. A.: L'ostéose parathyroïdienne et les ostéopathies chroniques, Paris, Masson et cie, 1932. (*e*) Jaffe, H. L.: Hyperparathyroidism (Recklinghausen's Disease of Bone), Arch. Path. **16:** 63 (July), 236 (Aug.) 1933. (*f*) See also an important recent paper by Albright, Fuller; Aub, J. C., and Bauer, Walter: Hyperparathyroidism, J. A. M. A. **102:** 1276 (April 21) 1934.

2. This series includes only cases of parathyroid overactivity in which one or more parathyroid adenomas were found at operation or autopsy. A bibliography is included in the reprints of this article.

removal of a calculus from the right kidney. But for three months thereafter she suffered headache, anorexia, nausea and vomiting, with loss of weight. In 1922 these symptoms recurred, together with nocturia and flaky sediment in the urine. Repeated cystoscopic examinations suggested pyelonephritis, and the right kidney was removed. The surgical specimen showed fibrotic degeneration of many glomeruli, hyalinization of many tubules and several areas of interstitial

Fig. 2 (case 1).—Abdomen, showing calcification within the substance of a horseshoe kidney.

calcification. The diagnosis of chronic nephritis was made. At that time bone deformities were not apparent. The blood pressure was 155 systolic and 95 diastolic, the blood urea nitrogen was 25 mg. per hundred cubic centimeters, the blood uric acid was 6.3 mg., and the phenolsulphonphthalein excretion was 30 per cent. In 1924 she complained of "rheumatic" pains in the feet and arms and a loss of 18 pounds (8.2 Kg.). A diagnosis of anxiety neurosis was made. In 1928, after slight trauma, she ruptured the right quadriceps tendon, which was found by x-rays to be partially calcified. She again complained of vague diffuse "rheumatic" pains. In 1931 increasing curvature of the spine, loss of height, and clubbing of the fingers were noted. In June 1932 she reported a loss of 15 pounds (6.8 Kg.), hoarseness, weakness and severe pain between the shoulder blades. A roentgen study of the chest did not show any pulmonary pathologic changes, but Dr. Ross Golden observed decalcification of the humeri with cysts suggesting hyperparathyroidism. Further roentgen examination disclosed generalized decalcification of bone, with cysts in the left femur and characteristic grainy mottling of the skull (Fig. 4). The serum calcium was elevated (table 1).

On admission, the patient appeared pale and emaciated. She was almost aphonic. There was an extreme rounded dorsal kyphosis, marked deformity of the thoracic cage and expansion of the terminal phalanges. No bowing of the legs, swellings or tenderness of the bones were noted. Her height, normally 68 inches (173 cm.), was now 58 inches (147 cm.). A small mass was palpable at the right lower pole of the thyroid gland. Laboratory examination on admission showed: blood Wassermann test, negative; erythrocytes, 4,160,000; leukocytes, 7,350 with 70 per cent neutrophils; hemoglobin, 87 per cent (Sahli). A faint trace of albumin was present in the urine, with many leukocytes in the sediment. The basal metabolic rate was +22 per cent. Investigation of the cause of the aphonia, July 5, by direct laryngoscopy under tribrom-ethanol anesthesia revealed only an edema of the mucous membranes. Recovery from anesthesia was slow. Vomiting and drowsiness persisted, and blood studies (table 1) indicated increasing renal insufficiency. The phenolsulphonphthalein excretion was 10 per cent, and the blood pressure 103 systolic, 85 diastolic. July 20, however, vomiting ceased and she appeared brighter. Her weight, however, had fallen to 76 pounds (34.5 Kg.) and the blood pressure to 75 systolic and 50 diastolic. July 28, exploration (W. B. P.) revealed a considerably enlarged lower right parathyroid gland, which was removed. August 3 (table 1), positive Trousseau and Chvostek signs were elicited and the patient complained of paresthesias. These responded to intravenous administration of calcium gluconate and parathyroid extract, but August 5 marked euphoria, irritability and irrationality developed, culminating in outbreaks of violence. As the serum calcium values rose, these episodes ceased. At the time of her discharge, September 14, her weight was 87 pounds (39.5 Kg.) and her general condition was much improved. She could walk slowly but felt some ache in the bones after standing for long periods. Roentgenograms of the bones showed striking recalcification (figs. 5 and 6). Twenty months after operation her condition continued to be very satisfactory.

The tumor was described (Dr. A. P. Stout) as a bilobed, partially cystic, yellowish pink mass, 3.0 by 2.0 by 0.8 cm. in size, and 4.5 Gm. in weight. Microscopic examination revealed a parathyroid adenoma showing a marked proliferation of the water-clear and rose-red cells with large syncytium-like cell groups. Small scattered islands of the two cell types were also seen.

Case 3.—E. M., an unmarried Scotch housemaid, aged 35, was admitted in 1916 because of a painless bony swelling of the right lower jaw of two years' duration. A partial ostectomy of the right mandible was done. On recurrence of the bony swelling in 1920 the jaw was resected. The pathologic diagnosis of the surgical specimen was giant cell sarcoma. All this time her general condition remained excellent except for transitory pains in the feet and right hip, attributed to flat feet. In 1924 she noted pain over the left clavicle, thought to be due to pleurisy or neuritis. In 1926 a definite tender swelling of the clavicle appeared with pain so marked that she was unable to use the left arm. There was also some weakness and slight soreness of the knees and thighs, but there were no general complaints. She had gained 20 pounds (9.1 Kg.) since the resection of the jaw.

On physical examination the patient did not appear acutely or chronically ill. Roentgenograms showed a multilocular cyst in the left clavicle, multiple areas of rarefaction in many ribs,

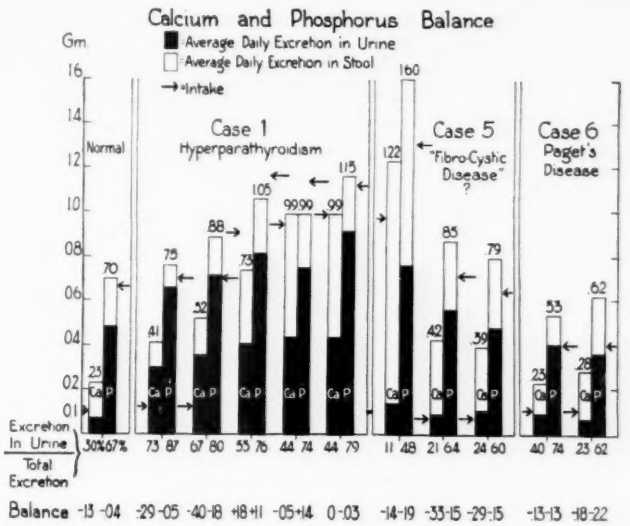

Fig. 3 (cases 1, 5 and 6).—Normal figures calculated from data of Farquharson, Salter and Aub (J. Clin. Investigation **10**: 251 [June] 1931). Patients 1, 5 and 6 were studied in the metabolism ward under the supervision of a specially trained personnel. Neutral ash diets were prepared, the calcium and phosphorus content being determined by analysis of aliquots of three day periods. Salt and water intake were controlled. The patients were allowed out of bed three hours daily.

in the right clavicle and in the left fibula and tibia. A moth-eaten decalcification of the terminal phalanges was seen in both hands. The skull showed a peculiar soft mottling, with widening of the tables attributed to Paget's disease. A biopsy of the area in the left clavicle showed "an unusual type of

giant cell sarcoma," with considerable osteoid tissue. Laboratory examinations revealed a mild secondary anemia; serum calcium, 11.5 and again 12.0 mg. per hundred cubic centimeters; serum inorganic phosphorus, 2.5 mg.; blood urea nitrogen, 17 mg., and phenolsulphonphthalein excretion, 50 per cent. After treatment with colloidal lead injections, she recovered the use of her left arm and was able to resume work.

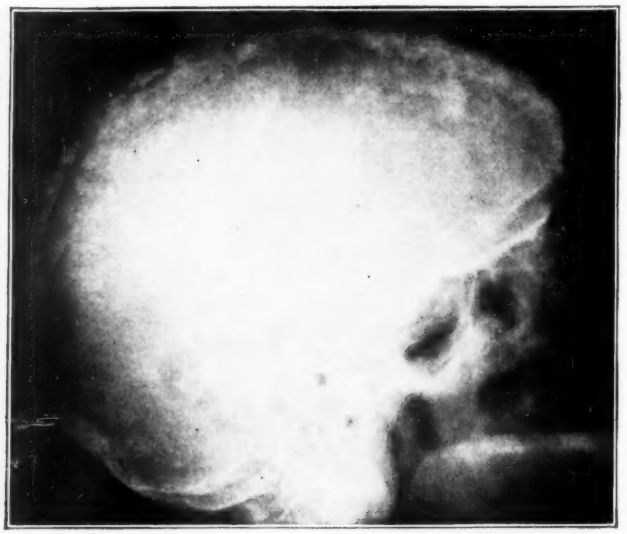

Fig. 4 (case 2).—Lateral view of skull before operation.

Roentgenograms of the skeleton in 1927 showed new cysts in the left femur and in both patellas. The diagnosis of fibrocystic disease was made by Dr. Ross Golden. In 1928 she returned to Scotland, where she was under the care of Dr. Archibald Young. She continued to feel quite well and maintained her weight and strength. In February 1932 she suffered a pathologic fracture of the leg. In May of that year a parathyroid adenoma was removed, but the patient subsequently succumbed.

CASE 4.—N. P., an unmarried American woman, aged 60, a clerk, was referred from the Neurological Institute, May 29, 1933, because of abdominal pain and generalized pruritus. There was a familial history of hypertension. One sister had polycystic kidneys. In 1910, after an attack of colic, a celiotomy disclosed numerous cysts extending from the right kidney to the ovary, which were removed. She had frequent attacks of renal colic since then and passed many stones. In spite of this and numerous minor complaints, she was able to carry on her work. In 1931 she was admitted because of progressive loss of function of the legs, symptoms of cystitis and continued attacks of renal colic. Roentgen examination revealed bilateral polycystic kidneys. In 1932 she complained, for the first time, of vague "arthritic" pains and numbness in the extremities. In 1932 she fractured both ischia in an accident, requiring hospitalization for almost a year. In 1933 she developed pruritus, nausea, vomiting and abdominal colic suggestive of biliary stone. She lost 12 pounds (5.4 Kg.) in this period. Constipation, present for years, became more marked.

When first seen, she walked with a limp, using a cane. There was a marked kyphoscoliosis of the lower dorsal and lumbar spine, with flaring of the lower ribs. The fingers were clubbed, with peculiar transverse indentations of the nails. The breath was definitely uriniferous, and the deep reflexes were hyperactive. The arteries were markedly sclerotic. There was no demonstrable tumor in the neck. The enlarged polycystic kidneys were easily palpable. The blood pressure was 130 systolic and 70 diastolic. The erythrocytes numbered 3,300,000 and the leukocytes 6,100, with 69 per cent neutrophils. The blood Wassermann test was negative. The basal metabolic rate was + 5 per cent. A trace of albumin was consistently present in the urine, with occasional leukocytes in the sediment. The phenolsulphonphthalein excretion on two occasions was 0 per cent. The blood urea nitrogen was 100 mg. per hundred cubic centimeters, and the blood creatinine 3.3 mg. Roentgen study of the biliary tract failed to show filling of the gallbladder, but no calculi were visualized. Marked decalcification of the vertebrae and a contracted pelvic inlet were noted. Decalcification of the ribs and fine mottling of the skull were described by Dr. Ross Golden as consistent with hyperparathyroidism. The serum calcium was found to be 9.7 mg. per hundred cubic centimeters and again 10.2 mg., with elevation of the serum inorganic phosphorus to 8.4 mg. per hundred cubic centimeters due to the renal insufficiency. The serum phosphatase was 27.3 Bodansky units.

Opinion was divided as to whether the skeletal changes were manifestations of a primary parathyroid adenoma or hyperparathyroidism secondary to chronic renal insufficiency due to the presumably congenital polycystic kidneys. In retrospect, it is felt that prompt surgical intervention was desirable and that such cases should be explored in spite of renal insufficiency (case 2). She was referred back to the Neurological Institute, where she received radiotherapy to the parathyroid region. The deformity of the spine increased, a swelling of the left maxilla and temporal bone appeared, she became bedfast, grew progressively weaker and finally died, Sept. 15, 1933. We are indebted to Dr. Abner Wolf for the autopsy report, which disclosed a tumor of the right upper parathyroid gland, 2 cm. in diameter, partially embedded in the right lobe of the thyroid gland, and another, in part cystic, tumor of the right lower parathyroid gland 1.5 by 0.7 by 0.4 cm. Histologically eosinophilic cells predominated. The bones were remarkably soft and pliable, many cystic. The skull was thickened and the outer table irregular. A fracture of the left femur was present. The liver contained several cysts. The kidneys were greatly enlarged, containing innumerable large and small cysts, with partially calcified walls. Microscopic examination showed little functioning renal tissue, marked interstitial fibrosis with areas of calcification, fibrosis of many glomeruli and dilatation of the tubules.

CLINICAL PICTURE OF HYPERPARATHYROIDISM

As in all previous studies,[3] our data on 115 published proved cases of hyperparathyroidism indicate that the disease occurs more frequently in females (eighty-six females, twenty-nine males) and, while widely distributed as to age incidence occurs most frequently in middle life (table 2). The course of the disease is usually measured in years, rarely in months.

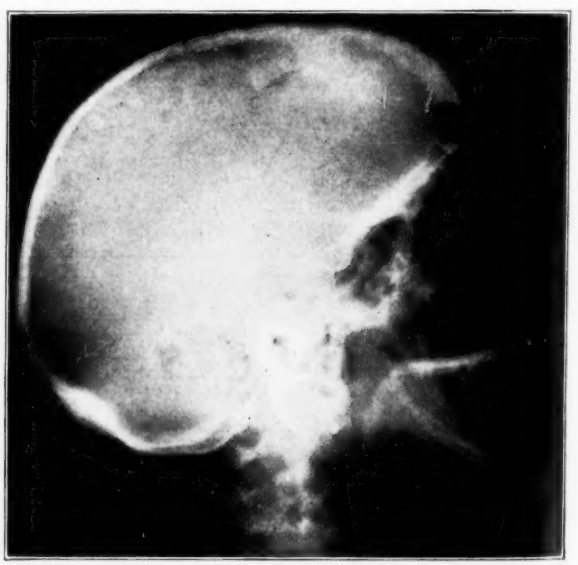

Fig. 5 (case 2).—Lateral view of skull nine months after operation.

3. Monographs 1a to 1f.

The disease begins most frequently with pain (table 3), usually a dull ache in the lower part of the back, legs or arms, intensified by exercise and often associated with stiffness of the joints. The pain, usually worse, more than a third of the patients in this series ultimately becoming bedfast. Totally incapacitated, wracked with pain, grossly deformed, in constant danger of recurring fractures, such patients emphasize the importance of diagnosis and removal of parathyroid adenomas early in the disease.

TABLE 1.—*Chemical Examination of Blood in Cases 1 and 2*

Date	Serum: Calcium, Mg. per 100 Cc.	Serum: Inorganic Phosphorus, Mg. per 100 Cc.	Serum: Phosphatase, Bodansky Units per 100 Cc.	Serum: Protein, per Cent	Serum: Nonprotein Nitrogen, Mg. per 100 Cc.
Case 1					
7/14/33	15.7	2.7	34.9	6.5	..
8/ 1/33	15.4	2.6	34.8	5.7	39
8/15/33	15.8	3.1	28.3	6.8	40
8/17/33	Operation				
8/18/33	9.7	2.4	32.1	...	47
8/21/33	8.8	1.9	29.9	...	..
8/23/33	8.7	2.1	36.2	...	25
10/ 6/33	9.4	4.2	16.6	7.2	51
12/29/33	10.5	4.0	7.9	7.2	60
3/16/34	10.4	4.0	6.1	7.0	60
Case 2					Urea N.
6/30/32	13.9	5.3	....	7.6	..
7/ 8/32*	13.1	7.1	20.2	...	47
7/12/32	10.5	6.1	....	7.5	136
7/20/32	8.0	5.8	....	...	132
7/25/32	9.9	3.9	....	...	100
7/28/32	Operation				
7/31/32	7.4	4.8	....	...	82
8/ 1/32	6.4	4.1	....	...	76
8/ 3/32	5.0	3.7	....	...	71
8/ 8/32	6.1	1.7	....	5.9	65
8/12/32*	8.2	2.6	11.5	...	64
12/ 7/32*	9.2	3.1	13.8	...	..
4/ 5/33*	8.9	3.9	12.1	...	28

* The authors are indebted to Dr. Aaron Bodansky for these values and for many helpful suggestions. The phosphatase activity of serum of normal adults as determined by his method varies from 1 to 4 units.[4]

regarded as rheumatic, arthritic or neuritic, tends to become more diffuse and intense. It may be so marked as to require the constant use of narcotics, and sometimes, when the patient has to be moved, the use of anesthetics. Bone tenderness, localized at first, is common and may eventually become generalized. Muscle weakness with hypotonia may be so marked as to simulate Addison's disease, myasthenia gravis or progressive muscle dystrophy, when associated with muscle wasting. Localized bone swellings, solitary and painless at first but multiple and tender later on, are most common in the jaws but occur frequently in the tibia, phalanges or elsewhere, particularly after slight trauma. They may appear years before the onset of general symptoms and may be difficult to differentiate pathologically from sarcoma or from focal osteitis fibrosa.

Pathologic fractures, particularly of the extremities and ribs, are often the immediate cause of hospital admission. The incidence of fractures increases as decalcification progresses, until the patients are reduced to such a state that turning in bed or violent coughing may result in bone fracture. Nonunion and malunion are common, often resulting in impairment of function and deformities. Deformities of all types occur (curvature of the spine, collapse of the thoracic cage or pelvis, symmetrical or asymmetrical enlargement of the head, lateral or anterior bowing of the legs, coxa vara and genu valgum), sometimes with loss of height and bizarre mutilation of the extremities. The deformities may simulate those seen in osteomalacia or in Paget's disease.

Disturbances of gait of the waddling type, or limp, may develop relatively early and become progressively

4. Bodansky, Aaron: Determination of Serum Phosphatase, J. Biol. Chem. **101**: 93 (June) 1933.

Polyuria and polydipsia may be so marked as to suggest diabetes insipidus. Renal colic was the predominating symptom in about 10 per cent of the cases. Bone changes may develop relatively late in patients with nephrolithiasis, pyelonephritis and chronic nephritis with serious impairment of renal function. Episodes of intractable nausea and vomiting may appear suddenly and persist for weeks or months. Anorexia and stubborn constipation are common and may be presenting symptoms. In six cases, sharp pain in the abdomen appeared. The gastro-intestinal symptoms may so dominate the picture as to suggest duodenal ulcer or acute appendicitis. Most patients lose weight, and in one-fourth this was a major complaint. Moderate secondary anemia is common. Nervousness, tachycardia and other symptoms have been described. A tumor in the neck could be palpated definitely in less than 10 per cent of the cases, a palpable mass sometimes proving to be a thyroid adenoma.

It would appear that these apparently diverse symptoms may be referred for the most part to the same causal mechanism: increased parathyroid secretion. Bone lesions similar to those occurring in clinical hyperparathyroidism have been produced in animals by injections of parathyroid extract.[5] Vomiting, anorexia, failure of kidney function and death in uremia result from parathyroid extract overdosage in acute animal

TABLE 2.—*Age Incidence of 115 Cases of Hyperparathyroidism*

Age in years	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70+
At operation or death, number of cases	..	7	17	19	28	23	5	1
At onset of symptoms, number of cases	2	10	21	25	23	17	2	

TABLE 3.—*Major Symptoms in 115 Cases of Hyperparathyroidism*

	Major Initial Symptoms, per Cent of Cases	Major Late Symptoms, per Cent of Cases
Skeletal		
1. Pain in back or extremities	72	62
2. Muscle weakness	22	23
3. Pathologic fractures	28	40
4. Bone swellings	26	22
5. Gross deformities	19	30
6. Disturbances of gait	24	22
7. Bedfast	4	31
Renal		
1. Polyuria, polydipsia	10	11
2. Colic	9	3
Gastro-intestinal		
1. Nausea, vomiting	8	12
2. Anorexia	3	9
3. Epigastric pain	2	5
Miscellaneous		
1. Marked loss of weight	10	24

experiments.[6] Anorexia, vomiting and stupor, with a hypercalcemia of 19.6 mg. per hundred cubic centimeters were reported [7] in a patient who, through error,

5. Jaffe.[1e]

6. Thomson, D. L., and Collip, J. B.: The Parathyroid Glands, Physiol. Rev. **12**: 309 (July) 1932.

7. Lowenburg, Harry and Ginsburg, T. M.: Acute Hypercalcemia: Report of a Case. J. A. M. A. **99**: 1166 (Oct. 1) 1932.

received excessive doses of parathyroid extract. Almost without exception, removal of parathyroid adenomas in cases of hyperparathyroidism resulted in abrupt cessation of nausea and vomiting in patients who had exhibited these symptoms, sometimes for months. The gastro-intestinal symptoms, therefore, and, to a certain degree, the acute renal symptoms appear to be toxic manifestations of acute hyperparathyroidism.[8] Polydipsia and polyuria presumably reflect the water loss associated with increased urinary excretion of calcium ("calcium diabetes"),[9] which also favors the formation of urinary calculi. Secondary infection of the urinary tract and serious impairment of kidney function are common complications and, not infrequently, the ultimate cause of death, sometimes even after acute symptoms are relieved by removal of a parathyroid adenoma. Postoperative investigation of renal function is, therefore, important (case 1).

ROENTGENOLOGIC EVIDENCE OF HYPERPARATHYROIDISM

The importance of a roentgen examination is indicated by the large proportion of cases in which suspicion is first aroused by the finding of osteoporosis and osteitis fibrosa with cyst formation in the roentgenogram, often fortuitously. As described by Camp[10] and others, the outstanding feature of hyperparathyroidism is the generalized decalcification of the skeleton producing an osteoporosis of varying severity in different locations. In the skull the calvarium exhibits a finely granular appearance; the bones may become thickened and the tables indistinct. Small cysts may be present. In the long bones the decalcification leads to a marked thinning of both the cortex and the trabeculae, with indistinct, irregular and fuzzy outlines. Cyst formation may be present in the central portion of the shafts or subperiosteally. The vertebrae show a granular pattern much like the calvarium with an added coarsely striated appearance. The same applies to the pelvis, where cysts are a common finding. When the disease is of long standing there is a marked loss of substance in the terminal phalanges, which are often almost completely resorbed (fig. 6). The remains of the tufts appear granular, and there is a peculiar clubbing of the finger tips due to loss of the supporting structures. Altered trabecular structure and cyst formation are often found in the metacarpals. In early stages of the disease, decalcification may not be striking. Cysts may be entirely absent or present in only one or two bones.

Softening of the skeletal structure results in deformities, particularly of the spine, pelvis and thoracic cage. In the long bones, pathologic fractures are common at the site of cysts. Aberrant calcification occurs with the increased mobilization of calcium from the bone. Renal stones are common. Dresser[11] emphasizes the importance of ruling out hyperparathyroidism in every case of bone rarefaction associated with renal calculus formation.

Diffuse bone rarefaction similar to that seen in hyperparathyroidism occurs in occasional cases of generalized xanthomatosis, metastatic malignant conditions, multiple myeloma and the malacias of nutritional origin but may be differentiated by the dissimilarity in skull changes. The granular appearance of the skull tables cannot be considered pathognomonic of primary hyperparathyroidism, however, since similar roentgen changes have been described in renal rickets[12] and pituitary basophilism.[13] Histologic bone changes of the same character have been described in long-standing nephritis with and without parathyroid enlargement.[14] These may represent states of what has been called "secondary hyperparathyroidism." Case 7 of our series, which falls into this group, showed marked grainy mottling of the skull (fig. 7).

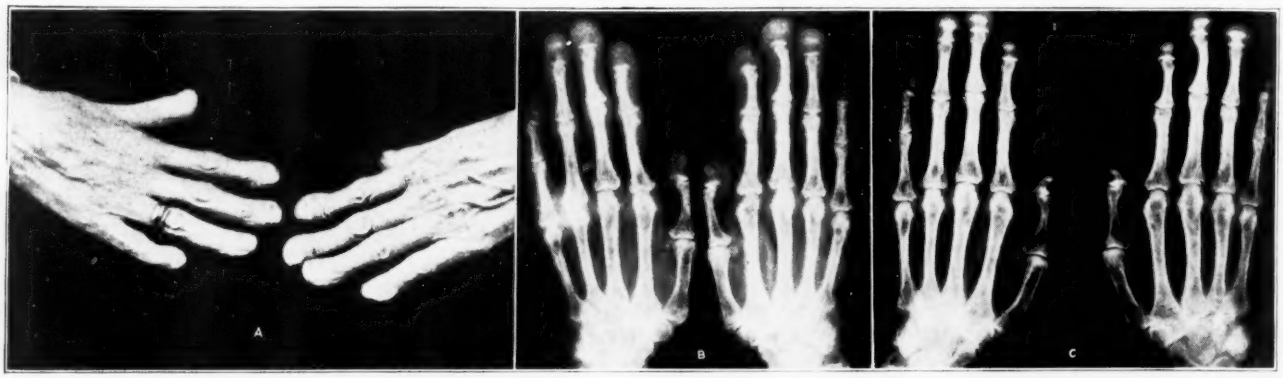

Fig. 6 (case 2).—*A*, clubbing of the fingers in hyperaparathyroidism due to decalcification of the terminal phalanges *B*, with recalcification nine months after operation (*C*).

MINERAL METABOLISM IN HYPERPARATHYROIDISM

Most of the cases investigated show, or purport to show, a more marked negative calcium and phosphorus balance than normal on low intake of these elements. An intake greater than what is believed to be ordinarily adequate was usually required to maintain the patient in equilibrium. However, variations greater than those occurring in normal persons[15] might not be demonstrable in mildly progressive forms of the

8. (*a*) Footnote 5. (*b*) Albright, Fuller; Baird, P. C., Cope, Oliver, and Bloomberg, Esther: Renal Complications of Hyperparathyroidism, Am. J. M. Sc. **187**: 49 (Jan.) 1934.

9. Morton, J. J.: Hyperparathyroidism, Internat. Clin. **3**: 18 (Sept.) 1933.

10. Camp, J. D.: Osseous Changes in Hyperparathyroidism, J. A. M. A. **99**: 1913 (Dec. 3) 1932.

11. Dresser, R.: Osteitis Fibrosa Cystica Associated with Parathyroid Activity, Am. J. Roentgenol. **30**: 596 (Nov.) 1933.

12. Vogt, E. C.: Renal Rickets, Am. J. Roentgenol. **30**: 624 (Nov.) 1933. Langmead, F. S., and Orr, J. W.: Renal Rickets Associated with Parathyroid Hyperplasia, Arch. Dis. Childhood **8**: 265 (Aug.) 1933. Caffey, John: Unpublished case.

13. Sosman, M. C.: Pituitary Basophilism, editorial, Am. J. Roentgenol. **29**: 845 (June) 1933. A case of pituitary basophilism now on our wards show mottling of the skull.

14. Bergstrand, H.: Ostitis fibrösa generalisata Recklinghausen mit pluriglandulärer Affektion der innersekretorischen Drüsen und roentgenologisch nachweisbarem Parathyroideatumor, Acta. med Scandinav. **76**: 128, 1931.

15. Bauer, Walter; Albright, Fuller, and Aub, J. C.: The Calcium Excretion of Normal Individuals on a Low Calcium Diet, J. Clin. Investigation **7**: 75 (April) 1929.

disease or in remission. Cases of osteomalacia, hyperthyroidism, chronic steatorrhea, "fibrocystic disease," multiple myeloma and carcinoma with bone metastases may also be in negative calcium balance. An increased ratio of calcium in the urine to total calcium excretion is characteristic of hyperparathyroidism but may not be present if renal function is markedly impaired.[8b] Elevation of the serum calcium above 11.5 mg. per hundred cubic centimeters was reported in seventy-three of the seventy-eight cases in which determinations were recorded, in fifty-nine cases being consistently above 12 mg. In this series, therefore, about 25 per cent of the cases failed to show a consistent hypercalcemia. Some early cases, in evident negative calcium balance but with normal serum calcium, later presented hypercalcemia. Hypercalcemia is frequently found in multiple myeloma,[16] as in three cases recently seen (16.1, 15.7, 15.3 mg. per hundred cubic centimeters), usually associated with hyperproteinemia. Hypercalcemia is occasionally observed in carcinoma with bone metastases,[17] as in three of our cases (13.4, 13.1, 12.3 mg. per hundred cubic centimeters). The serum calcium was normal in all our cases of focal osteitis fibrosa, Paget's disease, and other diseases involving the bones.[17a] This is in agreement with most recent authors.[18] In osteomalacia and chronic steatorrhea, the serum calcium may be low. Consistent depression of the serum inorganic phosphorus below 2.5 mg. per hundred cubic centimeters was found in only twenty-six of the fifty-two cases in which determinations were recorded. Low values are also observed in low phosphorus rickets and osteomalacia.

In chronic nephritis with severe renal insufficiency the serum inorganic phosphorus rises and the serum calcium tends to fall. For this reason, as pointed out by Albright and his associates,[8b] the hypophosphatemia and hypercalcemia of uncomplicated primary hyperparathyroidism may not be present when there is an associated marked impairment of renal function. The normal or high serum inorganic phosphorus and the apparently normal serum calcium values observed in cases 2 and 4 and in some cases in the literature might be explained by associated renal insufficiency. In some instances, apparently normal serum calcium values were higher than expected, when derived by the empirical formula of Peters and Eiserson:

$$Ca = -0.255\,P + 0.556\,\text{protein} + 7.$$

That the significance of serum calcium values cannot be fully determined unless the serum inorganic phosphorus and protein content are known [19] holds with particular validity in hyperparathyroidism.

Increased blood phosphatase activity was reported in all of the fifteen cases of classic hyperparathyroidism investigated. Increased serum phosphatase activity within the range observed in hyperparathyroidism may be encountered in monostotic and polyostotic Paget's disease, in mild and healing rickets and in osteomalacia of the low phosphorus type.[20] Very high values are obtained in active rickets (from 30 to 165 units [3]) and in generalized Paget's disease [21] (50-135 units [3]). Variable increases are observed in disturbed liver function, particularly in obstructive jaundice.[22] In our cases of focal osteitis fibrosa, multiple myeloma and "senile osteoporosis," the serum phosphatase values were normal,[17a] in agreement with most authors.[23] In our cases of carcinoma with osteoclastic metastases to the bones the serum phosphatase was either normal or somewhat increased, rarely over 12 Bodansky units. In three instances with liver metastases, without jaundice, and with normal serum calcium, the serum phosphatase was within the range found in hyperparathyroidism (25.1, 20.4, 20.1 Bodansky units).[17a] From the evidence now available, it would seem that a diagnosis of hyperparathyroidism is probably not indicated in cases presenting definite bone lesions, if the serum phosphatase activity is not definitely increased, particularly if the serum calcium is also normal. According to Albright and his associates [1f] the phosphatase may not be elevated in very early cases without demonstrable pathologic changes of bone.

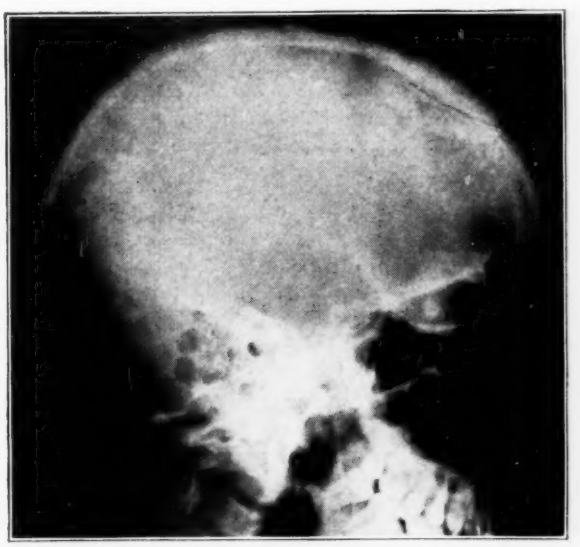

Fig. 7 (case 7).—Long standing renal insufficiency with skull changes identical with those in classic hyperparathyroidism.

Clinical, roentgenologic and metabolic study usually suffice to distinguish hyperparathyroidism from bone rarefactions encountered in focal osteitis fibrosa, osteomalacia, multiple myeloma, neoplastic diseases of or metastases to the bones, Paget's disease, osteogenesis imperfecta, renal rickets, Hodgkin's disease, generalized xanthomatosis, basophilic adenoma, enchondromas, osteoporosis associated with chronic steatorrhea, senility, disuse or dietary deficiencies, "fibrocystic disease" and other syndromes less sharply defined. Occasionally, a biopsy is necessary. If thorough investigation yields indecisive or conflicting results, surgical exploration

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for parathyroid tumor is indicated and should include aberrant sites [24] if no tumor is found in the usual areas.

Three recent atypical cases illustrate interesting problems in differential diagnosis:

CASE 5.—H. W., a Jewish man, aged 37, is deformed and bedridden. His history was summarized up to 1929 by Dr. I. S. Hirsch.[25] Since the age of 6, his course has been one of progressive incapacitation due to numerous deformities, bone swellings and pathologic fractures with marked loss of weight and asthenia but comparatively little pain. The skeleton shows marked decalcification, with numerous cysts, and coarse granular mottling of the skull. Serum calcium has always been normal, serum inorganic phosphorus from 2.5 to 3.5 mg. per hundred cubic centimeters, serum phosphatase from 22 to 28 Bodansky units. Renal function is unimpaired. Mineral balance studies (fig. 3) showed marked negative balance without increased calcium excretion in the urine. Biopsy of the bone was variously interpreted as "dysplasia" and osteitis fibrosa. Extensive exploration on two occasions failed to disclose a parathyroid tumor. High calcium diet, viosterol, intensive roentgen therapy to the neck and mediastinum have been without benefit. The diagnosis remains uncertain.

CASE 6.—A. O., an American woman, aged 60, obese, has polyostotic Paget's disease complicated by repeated fractures of the right leg necessitating marked restriction of activity. In addition to typical Paget changes elsewhere, the pelvic bones, lumbar spine and right leg show marked decalcification of bone with coarse trabeculations but no cysts. The serum calcium and phosphorus have always been normal, serum phosphatase 82 Bodansky units, calcium and phosphorus balance within normal limits (fig. 3).

Case 6 resembles some of those reported as illustrating what some authors believe to be transition stages between Paget's disease and hyperparathoidism. No evidence of hyperparathyroidism was obtained in our case.

Case 7, for which we are indebted to Dr. R. F. Loeb, is of particular interest with respect to the relationship between chronic renal insufficiency (resulting from congenital anomalies of the urinary tract or following acute nephritis) and bone changes, as in renal rickets and "secondary hyperparathyroidism":

CASE 7.—M. B., an American girl who died at the age of 24, had had increasingly frequent episodes of edema of the face and ankles since the age of 11. There was a persistent albuminuria; the phenolsulphonphthalein excretion never exceeded 5 per cent. The blood urea nitrogen was rarely below 45 mg. per hundred cubic centimeters and, in the last two years, was usually above 70 mg., with marked nephritic acidosis. In 1931 the serum calcium was 9.6 mg. per hundred cubic centimeters, serum inorganic phosphorus 8.3 mg. and serum protein 6.6. The blood pressure remained normal for years but gradually rose to 170 systolic, 110 diastolic. Retinal changes were absent. No skeletal deformities developed. Roentgen examination showed marked granular mottling of the skull as in hyperparathyroidism (fig. 7) and a rachitic irregularity in the calcification zones of both clavicles at the sternal junction. She died in uremia in 1932. Autopsy showed a chronic glomerulonephritis with extreme renal atrophy. No metastatic calcification or abnormalities of the ureters were observed. No parathyroid tumor was found in routine examination of the neck organs.

CONCLUSIONS

Hyperparathyroidism should be considered in the presence of obvious skeletal manifestations such as spontaneous fractures, bone swellings particularly of the jaws, gross deformities, and unexplained persistent pain in the bones. Obscure cases with presenting symptoms of marked polydipsia and polyuria, recurring renal calculi or unexplained asthenia with wasting of the muscles occasionally prove to be parathyroid adenomas. In most such cases the diagnosis of hyperparathyroidism may be confirmed or excluded by consideration of the history and clinical manifestations, roentgen study of the bones, increased serum calcium and phosphatase activity, low serum inorganic phosphorus and mineral balance studies. The results of clinical or metabolic or roentgenologic investigation alone may be indecisive or misleading. This is particularly true in the presence of marked renal insufficiency, or when the disease is in its early stages, is only mildly progressive or is in remission.

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ACUTE ANTERIOR POLIOMYELITIS IN PHILADELPHIA

A COMPARATIVE STUDY OF THE 1916 AND 1932 EPIDEMICS

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The year 1932 witnessed the second extensive outbreak of epidemic poliomyelitis in Philadelphia, the first being in 1916. In the intervening years no definite outbreaks occurred, although the years 1921, 1927 and 1929 to 1931 inclusive exhibited, as graphically represented in chart 1, an unusual number of cases. In the 1916 epidemic there were reported 1,006 cases and 307 deaths, a case death rate of 30.4 per cent. In the 1932 epidemic there were 728 cases and eighty-four deaths, a rate of 11.5 per cent. The respective death rates, however, are hardly comparable, since in 1916 the diagnostic criterion was paralysis whereas in 1932 many cases in the preparalytic stage were included. Not only was the fatality rate lower in the 1932 epidemic but the type of disease was less severe, resulting in relatively less permanent crippling.

SEASONAL AND GEOGRAPHIC DISTRIBUTION

The peak in both epidemics was reached in the fourth week of August with 133 and 118 cases, respectively. The greatest number of cases reported in a single day was thirty-six on August 22, 1916, and twenty-four on August 29, 1932.

The parallelism runs fairly true as to location of first appearance and geographic distribution. Both epidemics seem to have originated during the month of July from a focus in South Philadelphia. In 1916 there was a coexisting focus in North Philadelphia, and in 1932 a similar accessary focus in North-Central Philadelphia. In both years the disease extended to involve consecutively North and Northwest Philadelphia, and North and Southwest Philadelphia.

PREVALENCE IN ADJACENT LOCALITIES

The simultaneous prevalence of the disease in adjacent suburbs along the main line, including Merion, Devon, Narbert and Haverford, and in the adjoining

city of Camden was noticeable early in August. Seashore resorts within the city's commuting area were similarly afflicted, and a goodly number of resident children ill with the disease were returned home, some with the source of infection traced here, others to the resorts proper. The department of public health constantly endeavored to keep in close touch with the surrounding suburban areas in order to anticipate any localized prevalence of the disease. Throughout the counties of the commonwealth not adjacent to Philadelphia County the prevalence was normal or only slightly above. In the adjoining counties, however, the increased prevalence was early recognized and for the year totaled seventy-one cases in Montgomery, eighty in Delaware, twenty-two in Chester and fifteen in Bucks County. Exclusive of Philadelphia County there were 422 cases and sixty-five deaths reported throughout the state in 1932. In none of the large cities of the country did the prevalence rate approach that of Philadelphia.

SERUM PREPARATIONS IN 1931

In 1931 the city of New York experienced its third epidemic and by the middle of July was reporting twenty-five cases daily. It was early realized that Philadelphia, because of its proximity and ease of accessibility, was in great danger of sharing in this epidemic. A list of persons who had recovered and contacts from the 1916 epidemic was compiled, and consents were obtained among those over 16 years of age for donation of blood. The laboratory of hygiene of the bureau of health prepared the serum and dispensed it in measured containers for free distribution to physicians and hospitals. About 10,000 cc. of serum was so prepared but not all consumed, since the expected epidemic did not materialize.

BLOOD DONORS IN 1932

Early in June 1932 the department of public health, doubly apprehensive, formulated a working plan of attack and outlined an emergency program as well. Blood donors were again solicited and resolicited, so that approximately 38,000 cc. of serum was pooled for distribution to city and out of town areas. Blood had been contributed voluntarily by 1,139 persons, in 314 instances from persons who had recovered. Of the remaining there were 529 cases of contact and 296 in which the donors were normal persons who had not come in contact with the disease. In the latter part of August, on account of the shortage of serum, it became necessary to appeal for additional donors through the county medical society's weekly roster, the press, the radio and the pulpit.

USE OF BLOOD FOR PROPHYLAXIS

The injection of whole blood or serum, preferably pooled, from recovered, contact or other normal adults for prophylactic purposes was urged by the department early in August. This procedure was followed in many of the general hospitals as well as in private practice. The following data have been collected from these hospitals and from our own case records:

In fourteen hospitals, 2,255 children were immunized; of this number all received parents' whole blood excepting 320, who received both whole blood and convalescent serum. The average dose of whole blood was 60 cc. and of convalescent serum, 20 cc. One hospital immunized 1,341 children among whom three cases of anterior poliomyelitis developed. Our records show twelve cases of the disease in immunized children, four of whom developed frank paralysis and the remainder a nonparalytic type.

A tabulation of the twelve cases with the interval in days, preparation used, cell count and clinical type of disease is given in table 1.

HOSPITALIZATION

In the beginning of the epidemic, for purposes of diagnosis, hospitalization and serum requirement, the city was divided into four districts, each in charge of a diagnostician. The Philadelphia General Hospital was opened for cases not otherwise cared for in general hospitals. Permission was given general hospitals to admit cases in cubicles or separate wards with facilities for sterilizing utensils, linens, and the like, and in charge of special nurses observing medical asepsis. Early in August, in order to secure additional beds and

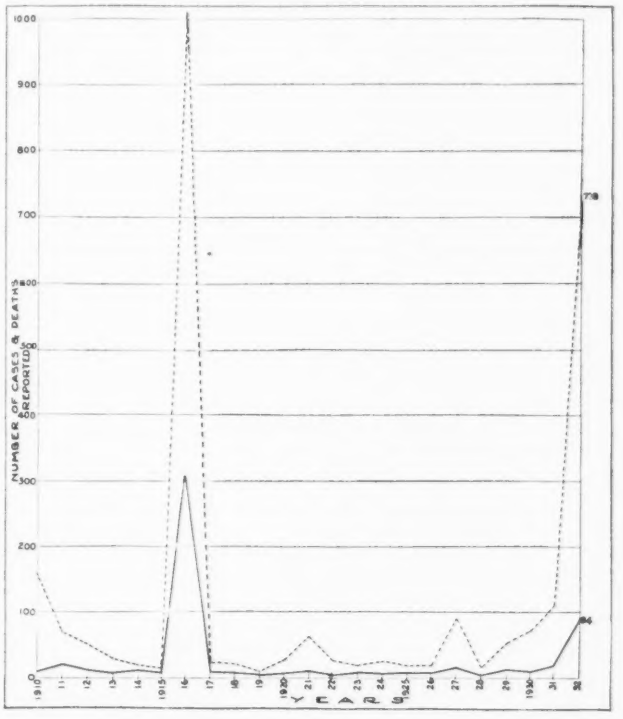

Chart 1.—Anterior poliomyelitis in Philadelphia, 1910-1932: solid line, deaths; broken line, cases.

treatment facilities for the increasing prevalence, the wards of the Philadelphia Hospital for Contagious Diseases were opened.

PHILADELPHIA HOSPITAL FOR CONTAGIOUS DISEASES

All cases reported were first examined by a representative of this department before hospitalized or quarantined at home. The nurses on the ambulance, in addition to securing a history of present illness and past diseases, instructed the parents to report at once at the hospital to donate blood for serum. Patients on admission were classified, so that those in the preparalytic stage or early paralytic stage were placed in an acute ward, and the late paralytic cases in a convalescent ward. Cases of doubtful diagnosis were isolated in cubicles until the diagnosis was determined. The latter group comprised those presumably in the abortive stage as well as those with other indetermined acute infections. Lumbar puncture was done in all cases on admission, and immune serum was adminis-

tered to all with clinical or laboratory evidence of poliomyelitis and to those in whom an active progressive infection was observed with or without evidence of paralysis. Serum was not given in afebrile cases exhibiting definite paralysis without progressive symptoms. A minimum of 100 cc. of immune serum, 40 cc. of convalescent serum and 60 cc. of contact serum constituted the initial dose. Whole blood was at times substituted for part serum when the supply of the latter was low. Two Drinker respirators were in constant use, and when both were occupied respiratory cases were temporarily transferred to nearby hospitals similarly equipped. During the outbreak there were 410 cases admitted, of which 304, or 74 per cent, were diagnosed as epidemic poliomyelitis. The remainder, 106, or 26 per cent, were diagnosed as other acute infections, including probably some abortive cases of

As far as is known, not a single secondary case developed among other patients in any hospital admitting poliomyelitis cases. This has been a universal experience and tends to emphasize the feebly communicable character of the disease in its clinical phase. The excellent medical and nursing care received in hospitals contributed in no meager way to the conservation of life and freedom from serious after-crippling.

HOSPITAL DISCHARGES QUARANTINED AT HOME

Acute cases in all hospitals, physical condition permitting, were transferred to home addresses, if the premises were private, after the temperature, pulse and respiration had remained normal for one week and there were no evidences of further extension of paralysis. They were transported in the Philadelphia Hospital for Contagious Disease ambulances, and home

TABLE 1.—*Cases Receiving Prophylaxis*

Date of Exposure	Date Injected	Date of Illness	Days Intervening	Age	Preparation	Amount, Cc.	Route	Cell Count	Paralyzed
8/17/32	8/23/32	8/27/32	4	6	Whole blood	40	Intramuscular	170	Preparalytic
8/31/32	9/ 2/32	9/ 9/32	7	7	Whole blood	60	Intramuscular	180	Preparalytic
9/16/32	9/20/32	9/23/32	3	8	Whole blood	80	Intramuscular	3	Bulbar
Unknown	8/29/32	9/ 3/32	4	7	Convalescent	15	Intramuscular	100	Preparalytic
Unknown	9/ 5/32	9/15/32	10	4	Whole blood	60	Intramuscular	620	Preparalytic
Unknown	8/28/32	9/ 8/32	10	9	Whole blood	60	Intramuscular	141	Preparalytic
Unknown	8/25/32	9/12/32	17	3	Whole blood	50	Intramuscular	250	Left leg
Unknown	9/ 1/32	9/10/32	9	3	Convalescent	10	Intramuscular	318	Left leg
Unknown	8/18/32	9/ 1/32	13	4	Whole blood	60	Intramuscular	No data	Preparalytic
Unknown	8/28/32	9/12/32	14	6	Convalescent	30	Intramuscular	119	Both legs
Unknown	9/ 5/32	9/15/32	10	4	Whole blood	60	Intramuscular	270	Preparalytic
Unknown	9/ 4/32	10/16/32	42	5	Convalescent	20	Intramuscular	250	Preparalytic

TABLE 2.—*End Results in 605 Cases—Six Months After Original Report*

			Original Paralysis or Muscular Weakness						No Paralysis or Muscular Weakness						Total			
	Cases	Per Cent	Cases	Per Cent	Serum Given	Per Cent	No Serum Given	Per Cent	Cases	Per Cent	Serum Given	Per Cent	No Serum Given	Per Cent	Serum Given	Per Cent	No Serum Given	Per Cent
Normal	265	43.8	128	48.3	109	85.2	19	14.8	137	51.7	70	51.0	67	49.0	179	67.0	86	33.0
Good	87	14.4	72	82.7	55	76.3	17	23.7	15	17.3	6	40.0	9	60.0	61	70.0	26	30.0
Fair	84	13.9	70	83.3	53	75.6	17	24.4	14	16.7	5	35.7	9	64.3	58	68.9	26	31.1
Poor	56	9.3	46	82.1	37	80.0	9	20.0	10	17.9	5	50.0	5	50.0	42	66.0	14	34.0
Trace	21	3.4	18	85.7	10	55.0	8	45.0	3	14.3	3	100.0	0	0.0	13	60.0	8	40.0
Totally paralyzed	12	2.0	12	100.0	8	67.0	4	33.0	0	0.0	0	0.0	0	0.0	8	67.0	4	33.0
Deaths	80	13.2	61	76.0	37	60.2	24	39.8	19	24.0	9	47.3	10	52.7	46	57.5	34	42.5
Total followed	605	83.0	407	67.3	309	76.0	98	24.0	198	32.7	98	49.4	100	50.6	407	67.3	198	32.7
Unable to follow	119	16.3	86	74.8	71	82.5	15	17.5	33	25.2	17	51.0	16	49.0	88	74.0	31	26.0
Deaths, unable to follow	4	0.6	4	100.0	2	50.0	2	50.0	0	0.0	0	0.0	0	0.0	2	50.0	2	50.0
Total cases	728	100.0	497	68.2	382	79.7	115	20.3	231	31.8	115	49.8	116	50.2	497	68.2	231	31.8
Total deaths	84	11.5	65	77.0	39	60.0	26	40.0	19	23.0	9	47.3	10	52.7	48	57.0	36	43.0

the disease. Of those diagnosed as poliomyelitis, 152, or 50 per cent, showed evidences of weakness or paralysis on admission, and 192, or 63.2 per cent, showed the same symptoms on discharge, an increase of over 13 per cent.

There were twenty-four deaths at the hospital, a case death rate of 7.89 per cent, as compared with 13 per cent in 1916.

The general hospitals of the city were very cooperative and in many instances, with beds full, continued to make room for the newcomer. In 1932 there were 360 patients, or 50 per cent, admitted to general hospitals, of whom fifty-three died, a case fatality rate of 14.7 per cent. The total number of cases hospitalized was 664, or 91 per cent, with a fatality rate of 11.6 per cent. There were sixty-four, or 8.89 per cent, of cases quarantined at home, with seven deaths, a case fatality rate of 10.9 per cent. In 1916, 76.7 per cent were hospitalized and 23.4 per cent treated at home; the fatality rate in hospitals was 22.6 per cent, and at home, 53.2 per cent.

premises were placarded for the remainder of the quarantine period of twenty-one days.

Discharged patients were given a list of instructions regarding further isolation and quarantine and were referred to the family physician for continued surveillance. Here again not a single secondary case developed in the homes of those so discharged. The Division of Child Hygiene was notified as a routine of all hospital discharges and sent its nurses to the homes for the purpose of instructing the heads of families in the rules of quarantine and of securing proper medical attention and supplies. This service was secured through the Emergency Aid, which organization had been instrumental in the rehabilitation of the 1916 group. This medical follow up, whether in home or hospital cases, was sufficiently comprehensive to include the prompt services of an orthopedic surgeon, the purchasing of needed braces and appliances, the transportation of convalescents to and from hospital clinics, and rehabilitation through occupational therapy with vocational guide and placement service. Cases discharged

with revised diagnoses were likewise visited by the nurses and observed by the medical inspectors for a period of fourteen days to detect evidences of muscular weakness or partial paralysis acquired in the interim.

COOPERATION OF THE MEDICAL PROFESSION

In the early days of August the director of public health, anticipating the gravity of the situation, called a joint meeting of the representatives of the county medical society and the health officers for the purpose of discussing ways and means of combating the disease. A plan was formulated for physicians familiar with the diagnosis of poliomyelitis to volunteer their services as diagnosticians to the department should an emergency arise. It was further suggested that general hospitals function as neighborhood centers for the examination of spinal fluids in suspected cases. In the latter part of the month neurologists and orthopedists in joint meeting proffered their services in the wards of the Philadelphia Hospital for Contagious Diseases, and in those of their own appointed hospitals for the treatment and after-care of the seriously crippled. This group functioned with great credit to all concerned. Reinforced by the cooperation of the county medical society, the medical profession at large, the hospitals, the civic organizations, the social workers and nurses, the public press, the radio and the pulpit, the health department was well entrenched to cope effectively with this epidemic.

DIAGNOSTIC AND CONTROL MEASURES

All suspicious and positive cases reported were seen for diagnosis and when doubtful the services of the district diagnostician were solicited. In all cases hospitalization was urged unless adequate home facilities prevailed. Cases of doubtful nature were likewise removed to a hospital for further clinical and laboratory study. The premises in home cases were placarded for the quarantine period of twenty-one days and the contacts kept under observation for fourteen

TABLE 3.—*Treatment of One Hundred and Ninety-Eight Preparalytic Cases With and Without Serum: Results at End of Six Months*

	Total Cases	Completely Recovered	Per Cent	Weakness or Paralysis	Per Cent	Deaths	Per Cent
Serum.....	98	70	71.4	19	20.5	9	9.1
No serum.	100	67	67.0	23	23.0	10	10.0

days. When patients were removed to a hospital, others in the same household were placed under observation quarantine and the premises placarded with an observation placard for the incubation period of two weeks. Contact food-handlers, school children, school teachers and others engaged in school work were excluded from employment during this period.

IMPORTED CASES

The importation of cases from the suburbs, outlying towns and nearby resorts by physicians and the public alike not only added to the increased prevalence and fatality rate but seriously interfered with the proper functioning of public health control. Many cases were conveyed to hospitals by physicians in their own cars, others in private conveyances to physicians' offices, and from there relayed to the Philadelphia General Hospital and the Philadelphia Hospital for Contagious Diseases or to other hospitals; still others were boldly conveyed to the very gates of the contagious disease hospital.

During the 1932 epidemic there were forty-one cases of the disease admitted from out of town to the Philadelphia General Hospital and the Philadelphia Hospital for Contagious Diseases and to other hospitals in this irregular way. Of our own residents eighty-four contracted the disease out of the city, and 603 were supposedly infected at home.

BOARD OF HEALTH DEFERS OPENING OF SCHOOLS

August 31, by a resolution of the board of health, the opening of schools was postponed and assemblages of persons under 18 years were forbidden in public and

TABLE 4.—*One Hundred and Fifty-Two Preparalytic Cases on Admission to the Philadelphia Hospital for Contagious Diseases With and Without Serum*

	Admitted Preparalytic	Discharged Nonparalytic	Paralyzed	Per Cent Paralyzed	Deaths	Per Cent
Serum.....	130	100	30	23.0	7	5.4
No serum.....	22	12	10	45.6	0	0.0

semipublic places. This was a precautionary measure well taken and met with the approval of educators and the public alike. The ban was completely lifted, October 5.

The epidemic of 1932 did not parallel that of 1916 in degree of prevalence, extent of virulence, or fatality rate. This may, in part, be attributed to the constant urge of early diagnosis and isolation, to the prompt reporting and hospitalization, to the early use of convalescent serum and to a possible neutralization of the virus itself.

END RESULTS OF A FOLLOW-UP SURVEY

A follow-up survey of 605 cases was made by medical inspectors in March 1933, including 407 cases with paralysis or muscular weakness and 198 without paralysis at the time of the original report. The end results in these cases were tabulated in accordance with the standards for measuring the degree of paralysis by the Harvard Infantile Paralysis Commission. While these end result examinations were not checked against similar examinations made at the time of the original report, they nevertheless serve as fairly accurate estimates of degree of recovery in the groups specified.

Table 2 represents these results with a further division into those treated with and without serum. There are 119 other cases in which no follow up was possible, as well as the total deaths tabulated with regard to paralysis and no paralysis, with and without serum.

Of the total 605 cases investigated, it is interesting to note that 265, or 43.8 per cent, are classified as normal or completely recovered, and that of these 128, or 48.3 per cent, originally showed weakness or paralysis, and 137, or 51.7 per cent, did not. There are 248 cases, or 41 per cent, showing varying degrees of residual paralysis, and twelve patients are totally paralyzed. Of the patients 407, or 67.3 per cent, received serum, 179, or 44 per cent, of whom recovered, and 198, or 32.7 per cent, did not receive serum, of whom eighty-six, or 43.4 per cent, recovered. Of the 304 cases admitted to the Philadelphia Hospital for Contagious Diseases, 192, or 63.5 per cent, showed evi-

dences of weakness or paralysis, and 112, or 36.5 per cent, did not.

Regarding serum treatment, 254, or 83.5 per cent, received serum, and fifty, or 16.5 per cent, did not. Of the 254 receiving serum, 124 presented evidences of weakness or paralysis on admission and 130 did not; of the fifty who did not receive serum twenty-five showed evidences, and twenty-two did not. Among twenty-four deaths at this hospital, eighteen, or 75 per cent, of the patients had serum, and six, or 25 per cent, did not.

TREATMENT WITH AND WITHOUT SERUM

Tables 3 and 4 represent the end results in 198 preparalytic cases and the results on discharge of 152 preparalytic cases at the Philadelphia Hospital for Contagious Diseases in which treatment with and without serum was given.

The normal end results obtained in 265 cases previously tabulated, of which 179, or 67 per cent, were

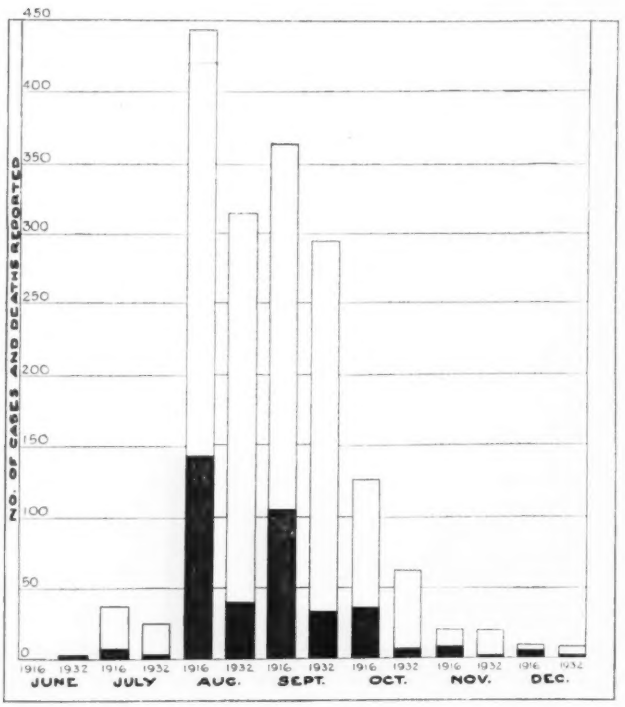

Chart 2.—Comparative monthly incidence of cases and deaths from anterior poliomyelitis in Philadelphia, 1916-1932: white rectangles, cases; black rectangles, deaths.

serum treated, are favorable to its use, but unfortunately the cases were not divided into comparable groups numerically or by case classification. Regarding the end results in 198 preparalytic cases, 98 with and 100 without serum, the serum group shows an advantage. In the 152 preparalytic cases at the Philadelphia Hospital for Contagious Diseases the paralysis percentage is proportionally less in the serum treated, but the death percentage is higher, probably because there were more cases of the severer grades of paralysis included. It is generally conceded that immune serum is of no value after the onset of paralysis, yet its use was not limited to the preparalytic type either in home cases because of insistence of parents, or in hospital cases showing febrile and progressive symptoms.

The small number of preparalytic cases with controls shows no decided advantage in favor of the serum treated group. While there is no conclusive evidence presented in favor of the use of serum, we feel that for want of a specific therapeutic agent its use should be continued in the early preparalytic cases, checked whenever possible by comparable controls until a final evaluation is determined on. A comparative estimation of the routes of administration of serum shows that the intravenous was used in 37 per cent of cases, the intramuscular in 56 per cent, and spinal in combination in 2.5 per cent. Whole blood was used in combination in 22.5 per cent and transfusion in 2 per cent. There were 1,062 spinal counts made by the Division of Laboratories, 754 of which showed a count of over 12 per cubic millimeter. The average cell count for all cases was 88 per cubic millimeter and the highest count was 1,500 per cubic millimeter.

CROSS PROTECTION

In an effort to determine what bearing cross protection in infections may have on immunity to poliomyelitis, a careful history of previous acute infectious diseases taken in all cases admitted to the Philadelphia Hospital for Contagious Diseases showed that 64.1 per cent of cases gave such a history with apparently no acquired protection as a result. Of the 304 patients, 56.3 per cent were vaccinated against smallpox, and 51.3 per cent had had diphtheria toxin-antitoxin. Enlarged tonsils, probably diseased, were present in 81.6 per cent of cases, presumptive evidence of a diseased nasopharynx with a consequent lowering of the virucidal property present in its normal secretions as determined by Amos and Taylor. A history of recent tonsillectomies was not compiled.

COMPARATIVE EPIDEMIOLOGIC DATA

The following data represent the most important epidemiologic features in an analysis of 728 case histories:

Seasonal Incidence.—The distribution of cases by months in chart 2 shows the seasonal variation. In both 1932 and 1916 the maximum prevalence occurred, in the order given, in the months of August, September and October. The onset in 1932 started later in July, but in both epidemic years the greatest monthly prevalence was in August, with the maximum number of cases reported in the fourth week. This high rate of prevalence was coincident with a high mean temperature and a low mean rainfall. The mortality curve follows that of the incidence with the greatest number of deaths in August and September of both years.

Cases and Deaths by Sex and Age.—Males were more susceptible than females in the proportion of 58.5 per cent to 41.5 per cent for 1932, and of 54.4 per cent to 45.6 per cent in 1916. The case mortality for males was slightly higher in 1932. In both epidemic years the age group 1 to 5 years prevailed, followed by the 5 to 10 year group. In 1916 no cases of patients over 30 years of age were reported. In the 1932 epidemic comparatively more cases occurred in the older age groups 5 to 10, 10 to 15, 15 to 20 years. The mortality rate was highest in the 1 to 5 year group in both years, but in 1932 the rate was comparatively higher in the 5 to 10 and the 10 to 15 year groups.

Chart 3 represents the comparative percentage groups of cases and deaths in both epidemics.

Color Grouping: Cases and Deaths.—In 1916 there were twenty-eight Negro cases as contrasted with 107 in 1932. This is attributed to an increase of 160 per cent in the Negro population since the 1910 census;

i. e., an increase from 84,459 to 219,599. The ratio of cases to deaths in both years is about the same for the Negro and the white race. In 1932 a similar trend toward the older age groups is observed.

Multiple Cases in Families.—The infectiousness of poliomyelitis has frequently been questioned because of

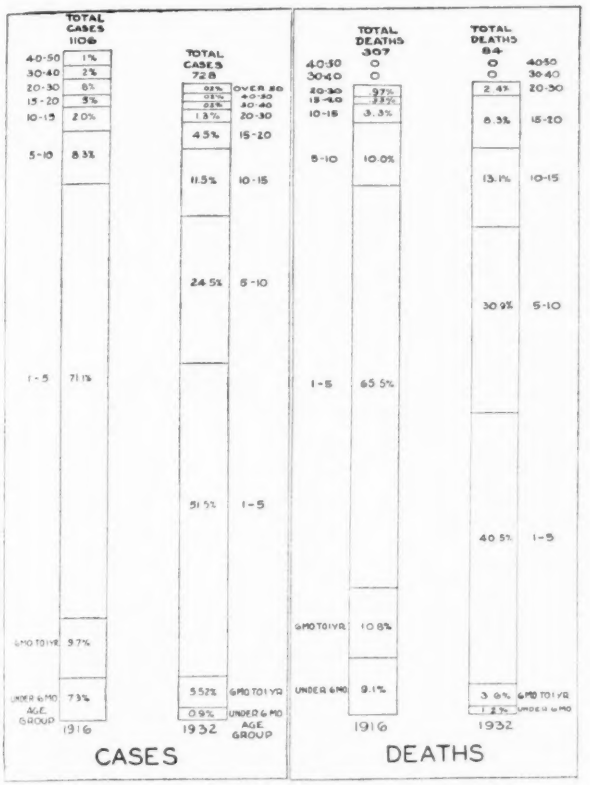

Chart 3.—Cases and deaths, acute anterior poliomyelitis, comparative age groups in percentage, 1916 and 1932.

the large number of families with children in which only one case occurred. In 1932 there were twenty-five family groups in which more than one case developed, as contrasted with fourteen similar groups in 1916. There were twenty-four families with two cases, and one family with three cases.

In these multiple-case groupings it is important to distinguish between those that may be regarded as true secondary cases and those in which infection resulted from a common or independent source. Among our so-called secondary cases there are three abortive, thirteen preparalytic and ten paralytic cases. According to Aycock and Eaton, the subsequent cases occurring in families up to an interval of eight days are probably of common source infection, and those from the ninth to the seventeenth day, averaging fourteen, are probably true secondary cases. In our series there are apparently six true secondary cases: two at nine, two at ten, one at eleven and one at nineteen day intervals. One case that occurred after an interval of twenty-four days is probably of a common or independent source of infection. These authors conclude by saying that in poliomyelitis the recognized case of the disease is relatively a far less important source of infection than in scarlet fever or diphtheria, and that in poliomyelitis it is not so much the case itself as the source from which the case was infected.

Table 5 gives the interval in days between primary and subsequent cases.

Relative Frequency of Symptoms and Signs.—The classic symptoms of fever, headache and vomiting, and the signs of hyperesthesia, irritability, twitchings, tremors, stiffness of the neck and rigidity of the spine are prominently represented in table 6.

It is interesting to note that the average number of days between the onset of illness and the visit of the physician was three days, between the physician's visit and the date of report three days, and from the date of onset to the appearance of paralysis three days.

Distribution of Paralysis of Extremities.—The right leg was found to be the most frequent single extremity involved, followed by the left leg and then both legs. The right arm was more frequently involved than the left, as table 7 shows.

TABLE 5.—*Multiple Cases of Poliomyelitis in Families in 1932*

Family Group	Date of Onset	Interval of Days	Sex	Age	Paralysis	Cell Count
1	*July 19	..	♀	4	Right arm	
	July 26	7	♂	5	Left arm	
	July 26	7	♀	2	Right arm	
2	*July 31	..	♂	6	Left arm	
	August 4	4	♂	4	Preparalytic	150
3	*July 27	..	♀	12	Right arm and right leg	
	August 1	5	♀	15	Both arms and legs	
4	*August 5	..	♂	5	Both legs	
	August 7	2	♀	3	Preparalytic	60
5	*August 8	..	♀	6	Facial	
	September 1	24	♂	4	Abortive	
6	*August 8	..	♂	7	Preparalytic	177
	August 10	2	♀	3½	Left leg	
7	*August 10	..	♀	5	Preparalytic	33
	August 19	9	♂	12	Preparalytic	79
8	*August 8	..	♀	1	Both legs	
	August 14	6	♂	1	Abortive	
9	*August 13	..	♂	3	Right leg	
	August 18	5	♂	1	Preparalytic	50
10	*August 12	..	♀	4	Both legs	
	August 15	3	♀	1	Preparalytic	225
11	*August 5	..	♀	6	Abortive	
	August 14	9	♂	6	Left arm	
12	*August 14	..	♂	7	Right arm	
	September 2	19	♀	10	Preparalytic	51
13	*August 19	..	♂	4	Bulbar	
	August 23	4	♂	3	Preparalytic	49
14	*August 17	..	♀	3	Preparalytic	120
	August 27	10	♂	6	Preparalytic	170
15	*August 20	..	♂	7	Right leg	
	August 28	8	♂	1	Preparalytic	197
16	*August 26	..	♂	7	Preparalytic	133
	August 29	3	♂	3	Left leg	
17	*August 10	..	♂	3	Abortive	
	August 14	4	♀	7	Right leg	
18	*August 18	..	♂	7	Bulbar	
	*August 29	11	♂	5	Abortive	
19	*August 26	..	♂	4	Preparalytic	142
	August 30	4	♀	7	Left leg	
20	*August 22	..	♂	1	Preparalytic	70
	August 24	2	♀	3	Right arm and both legs	
21	*August 28	..	♀	5	Preparalytic	345
	September 4	7	♂	3	Preparalytic	390
22	*August 19	..	♀	1	Preparalytic	195
	August 29	10	♂	6	Preparalytic	20
23	*September 1	..	♂	10	Preparalytic	30
	September 9	8	♂	6	Preparalytic	19
24	*September 15	..	♂	5	Preparalytic	620
	September 15	0	♂	4	Preparalytic	270
25	*September 16	..	♀	10	Bulbar	
	September 23	7	♂	8	Bulbar	

* Initial case.

Clinical Types of Paralysis.—As usual, the spinal type of the disease predominated and was represented in 62.37 per cent of the 497 cases presenting weakness or paralysis.

There were 107 cases showing muscular weakness and 231 preparalytic cases presenting the clinical symptoms and spinal fluid changes of this type.

SUMMARY

The 1932 epidemic differed little in its seasonal incidence or geographic distribution but much in its morbidity and mortality rates from the 1916 epidemic. There were a total of 728 cases and 84 deaths reported in the former and 1,006 cases and 307 deaths in the latter year. The case death rate in 1932 was 11.5 per cent, or 5.6 per hundred thousand of population; in 1916, 30.4 per cent, or 18 per hundred thousand of population. There were many more cases diagnosed and reported in the preparalytic stage during the recent outbreak, resulting in a greater number of recovered cases. In addition to a proportionally greater number of recovered cases there was a substantial reduction in the paralyses of the more severe grades, as evidenced in the end results of the follow up group of 605 cases, among which 43.8 per cent were classified as normal, 14.4 per cent as good, 13.9 per cent as fair, 9.3 per cent as poor, 3.4 per cent as showing a trace of paralysis, 2 per cent as totally paralyzed, and 13.2 per cent as deaths.

Early diagnosis and isolation, prompt reporting and hospitalization, serum therapy and appropriate aftercare were consistently urged on the profession.

The susceptible age group in both epidemics was the 5 to 10 year group, with the higher age groups involved to a greater degree in the 1932 outbreak. In the latter, 57 per cent of the cases and 45 per cent of the deaths were in the age group under 5 years, whereas in 1916 88 per cent of the cases and 85.4 per cent of the deaths were so differentiated. The greatest seasonal incidence encompassed the summer months, coincident with the high temperature and low rain fall.

No conclusive evidence is offered with regard to the value of passive immunization by the use of whole blood or serum.

The use of human immune serum for treatment in the early preparalytic cases seems justified by the end results obtained in a small series of cases and controls. The dearth of true secondary cases in families, hospitals and institutions serves to emphasize the fact that infection by direct contact with clinical cases is not common. Human carriers apparently constitute the reservoir for the virus.

The closing of schools and swimming pools and the restricted attendance at the moving picture theaters certainly prevented mass contact exposure, but at no time were they considered as foci of infection.

No epidemic can be successfully checked and the damage repaired without the whole-hearted cooperation of the medical profession, the hospitals, the public and the various coordinating agencies, including the nurses, the social service workers, the public press, the pulpit, the radio and, finally, such organizations as the Emergency Aid, whose interest in the after-care and treatment of those left crippled completes the list.

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TABLE 6.—*Relative Frequency of Symptoms and Signs in Percentage*

Symptom	Per Cent	Symptom	Per Cent
Fever	92.5	Convulsions	3.8
Headache	66.2	Chills	14.7
Vomiting	48.5	Coryza	2.2
Pains	37.1	Stiffness of the neck	50.4
Irritability	33.2	Rigidity of the spine	24.0
Drowsiness	19.5	Kernig sign	6.7
Hyperesthesia	27.2	Babinsky sign	3.0
Constipation	16.0	Muscular twitching	6.7
Diarrhea	14.7	Tremors	3.4

TABLE 7.—*Relative Frequency of Paralysis of Extremities in Percentage*

Part	Per Cent	Part	Per Cent
Right leg	8.3	Left arm	4.6
Left leg	7.9	Both arms	1.6
Both legs	7.3	Both arms and both legs	1.5
Right arm	6.0		

TABLE 8.—*Types of Paralysis*

Paralysis	Number of Cases
Spinal	310
Bulbopontine	70
Landry's	6
Cerebral	3
Polio-encephalomyelitis	1

THE ABSENCE OF DETERIORATING EFFECTS OF BROMIDES IN EPILEPSY

HARRY A. PASKIND, M.D.

CHICAGO

Bromine was discovered by Balard [1] in 1828; he was also the first to produce potassium bromide. In 1850 Huette [1] published a study of the action of potassium bromide and stated that it causes general and sexual sedation, anesthesia of the palate and throat, mental torpor, disorders of motility and cutaneous anesthesia.

Locock [2] first used bromides in epilepsy and noted its favorable effect. Later Voisin [1] and Brown-Séquard [1] systematized and made clear the use of bromides in this disorder, and ever since they have been in general use. That they diminish the number and severity of seizures has been demonstrated times beyond number.

The reputation of bromides is, however, not unsullied, for many writers, old and modern, have stated that in patients with epilepsy they produce mental deterioration.

Eccheverria [3] in 1870 stated that a single dose of from 10 to 20 grains (0.65 to 1.30 Gm.) had caused patients with epilepsy to become maniacal, suicidal, hallucinatory and melancholic. Bannister [4] described an orderly patient with epilepsy who on 15 grains (1 Gm.) of bromide three times daily became a "dangerous lunatic," the imputation being that bromide caused the mental change. Jewell [5] believed that many persons with epilepsy were in asylums not because they had epilepsy but because they were treated with bromides. Bennett [6] wrote that, in 18.8 per cent of epileptic patients treated with bromides, mental weakness developed. Hare [7] stated that mental changes in epileptic

From the Department of Nervous and Mental Diseases, Northwestern University Medical School.

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patients are greatly increased by the constant administration of bromides; Huchard [8] wrote that they affect the intelligence; Collins [9] that, in epileptic patients, bromides produce "colossal" mental and physical depravity, and Maguire [10] expressed the opinion that the prolonged administration of bromides is liable to produce changes in the cortical nerve cells, such as chromatolysis and complete dissolution with consequent dementia, but he did not adduce histologic evidence. Weir Mitchell [11] stated that effective doses of bromide may produce loss of memory, inertness, low spirits and, in rare cases, forms of melancholia, maniacal excitement and even suicidal or homicidal mania. Davy [12] believed that the continued use of bromides in patients with epilepsy produced physical and mental enfeeblement, and Rayner [13] that the use of bromides was in many instances responsible for the institutionalization of previously sane persons with epilepsy. Hunt [14] states that the prolonged administration of bromides may cause a condition akin to dementia paralytica. Sollmann [15] states that long continued use of bromides leads to psychic deterioration, which may disappear when the drug is stopped or reduced. Church [16] wrote that it was a frequent experience to see patients with epilepsy "brutalized" by bromides go months without fits but with a loss of mental and physical activity. Clark [17] advised that the use of bromides be discontinued in epilepsy because they produce symptoms just as bad as the disease itself. Wechsler,[18] in a recent textbook, says: "It is said that bromism may cause mental deterioration." Muskens [19] stated that there is no doubt that most cases of epilepsy in which bromides have been used over a period of years do present very serious mental deterioration. Strecker and Ebaugh [20] wrote that bromides in large doses brutalize the patient with epilepsy.

These statements constitute a serious indictment against the use of bromides in epilepsy and, if true, would practically contraindicate their use.

I shall try to show that this impeachment of the use of bromides in epilepsy is unjustifiable. Such a demonstration I believe to be urgently needed, for a great many physicians, because of such authoritative statements, doubtless bolstered up by experience with the abuse of bromides, have come to use them timidly, half-heartedly, ineffectually or not at all.

The material used in this study consists of the records of fifty-four patients with epilepsy, from the private practice of Dr. Hugh T. Patrick, who have been treated with bromides for a year or longer. Of these, five were treated for one year; nine, two years; five, three years; three, four years; seven, five years; five, six years; four, seven years; three, eight years; one, nine years; one, ten years; three, eleven years; two, twelve years; three, thirteen years; two, sixteen years, and one for seventeen years. Of these patients, three, or 5.5 per cent, were found to be mentally deteriorated. The remainder, or 94.5 per cent, showed not the slightest signs of deterioration or behavior disorder and performed their customary tasks, sometimes very responsible tasks, with the same efficiency as persons in good mental health.

In a previous study of 304 epileptic patients from the private practice of Dr. Patrick who had had the disease six years or longer, I [21] found that 6.5 per cent had deteriorated. In this group there were many patients who had received no treatment for years, or inadequate treatment, or periodic treatment; some had received adequate treatment throughout the course of the illness; in some the disease was not recognized as epilepsy until some months or years after the onset. It would seem then, that the occurrence of deterioration in the present group that received bromide medication continuously for a year or more is no greater than in the larger group in which treatment was in a few cases adequate but in most cases inadequate, periodic or absent and in which various remedies had been used including bromides (5.5 per cent deteriorated to 6.5 per cent, respectively).

In order to elucidate the question more clearly I have prepared the accompanying table, outlining the salient features of the cases dealt with in this report. A study of this table shows that the dosage of bromide employed was not inconsiderable; in almost all instances it was large enough to exert a favorable influence on the disease. In some cases the seizures disappeared while the patient was taking bromides. It may also be noted that regardless of how long the patient took bromides (with the exception of the three deteriorated patients) there was no educational or vocational decline.

Based on these observations I have come to believe that bromides in rather full therapeutic doses do not cause deterioration in patients with epilepsy and that statements in the literature regarding this point are in need of revision.

It remains to be explained why so many authors have believed that bromides cause deterioration in patients with epilepsy. The reasons for this are not far to seek.

I believe that one of the reasons that bromides are in such bad repute is the failure to adjust the dosage. A dosage that will produce salutary effects in one patient may produce signs of bromism in another. The symptoms of bromism have been well described by Turner [22] as follows:

> This condition is characterized by a blunting of the intellectual faculties, impairment of memory and production of a dull and apathetic state. The speech is slow, the tongue tremulous, saliva may flow from the mouth, the gait is staggering and the movements of the limbs feeble and infirm. The mucous membranes suffer so that the palatal sensibility may be abolished, and nausea, flatulence and diarrhea supervene. The action of the heart is slow and feeble, the respiration shallow and imperfect and the extremities blue and cold. Acne usually covers the skin of the face and back.

It must be remembered, however, that these symptoms of bromism are produced only by doses in excess of the patient's tolerance and that this is intoxication

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Effects as Regards Deterioration of Patients with Epilepsy Treated with Bromides for from One to Seventeen Years

Case	Sex	Age of Onset	Duration, Yrs.	Type and Frequency of Seizures	Sodium Bromide	Effect on Seizures	Occupation Before Taking Bromides	Occupation After Taking Bromides	Evidences of Deterioration
1	♂	31	10	Grand mal, 2-3 per month Petit mal, 1 per week to 3 per day	66-72 gr. daily for 1 year	Diminished in number	Salesman	Salesman	None
2	♀	10	4	Petit mal, 1 per week to 8 per day	45-60 gr. daily for 1 year	Diminished in number	Grammar school	Grammar school	None
3	♀	5	7	Grand mal, 1 per year to 1 per week	45 gr. daily for 1 year	Eradicated	Grammar school	Grammar school	None
4	♀	18	7	A few petit mal every 3 to 11 months	60-66 gr. daily for 1 year	Eradicated	Student	Teacher	None
5	♂	16	30	Petit mal, 3-4 per week	66 gr. daily for 1 year	Less frequent	Clerk	Clerk	None
6	♀	6	22	Petit mal, 4 per week	60-66 gr. daily for 1 year	Less frequent	Teacher	Teacher	None
7	♂	21	10	Grand and petit mal, 3-4 per year	66 gr. daily for 2 years	Diminished in frequency and intensity	Teacher	Teacher	None
8	♀	29	9	Grand mal, 3-4 per year	60-66 gr. daily for 2 years	Eradicated	College student	College student	None
9	♀	12	6	Petit mal, every 2 days Grand mal, every 2 weeks	45-60 gr. daily for 2 years	Less frequent	High school	High school	None
10	♀	33	16	Grand mal, 1 or 2 per month	66-72 gr. daily for 2 years	Less frequent	Housekeeper	Housekeeper	None
11	♂	2	1	Grand mal, every 2 weeks	27 gr. daily for 2 years	Eradicated	.....	At age of 27, a college graduate looking for work	None
12	♂	24	6	Grand mal, every 3 months to 3 days	66-72 gr. daily for 2 years	Reduced severity and frequency	Insurance agent	Insurance agent	None
13	♂	35	34	Grand mal, 4-6 per year Petit mal, 1-2 per month	66 gr. daily for 2 years	Eradicated	Farmer	Farmer	None
14	♂	50	18	Grand mal, 4-12 per year	66 gr. daily for 2 years	Reduced in frequency and severity	Banker	Banker	None
15	♂	9	3	Grand mal, every 3 months	30-45 gr. daily for 3 years	Eradicated	School boy	School boy	None
16	♂	33	6	Grand mal, 1-2 per year Petit mal, 1 in 2 months to a few per day	66-72 gr. daily for 3 years	Reduced in frequency	Mechanic	Mechanic	None
17	♀	18	12	Grand and petit mal, 3 times per year to 1 in 2 weeks	66 gr. daily for 3 years	Reduced in frequency	Housekeeper	Housekeeper	None
18	♀	21	24	Petit mal, 1-8 per day	66-75 gr. daily for 3 years	Reduced in frequency	Housekeeper and communal worker	Housekeeper and communal worker	None
19	♀	29	5	Grand mal, 1 per month to every few days	66 gr. daily for 3 years	Reduced in frequency	Housekeeper	Housekeeper	None
20	♂	39	11	Petit and grand mal, 1 in 2 weeks to 8 per week	66 gr. daily for 4 years	Reduced in frequency	Bookkeeper	Bookkeeper	None
21	♂	13	5	Petit mal, 20 per day Grand mal, 5-6 per day	45-60 gr. daily for 4 years	No change	None	None	Became deteriorated
22	♂	15	5	Petit mal, 1 per month to 1 per day	45-60 gr. daily for 4 years	Reduced in frequency	Student	Student	None
23	♂	15	7	Grand mal, 1 in 6 months to 1 in 2 weeks	66 gr. daily for 5 years	Reduced in frequency and severity	Student	Junior business executive	None
24	♂	19	7	Grand mal, 1 in 3 months to 1 in 5 days	60-90 gr. daily for 5 years	Reduced in frequency	Machinist	Machinist	None
25	♂	21	8	Petit mal, a few per day	66 gr. daily for 5 years	Eradicated	Office worker	Office worker	None
26	♂	27	12	Petit mal, a few per day Grand mal, 1 in 2 months	60-90 gr. daily for 5 years	Reduced in frequency	Foreman	Foreman	None
27	♀	26	13	Petit mal, 2-3 per month Grand mal, 3-4 per year	66-72 gr. daily for 5 years	Eradicated	Beauty shop operator	Beauty shop operator	None
28	♀	16	25	Petit mal, 12-15 per month	66-72 gr. daily for 5 years	Eradicated	Housekeeper	Housekeeper	None
29	♂	22	19	Petit mal, 1-4 per day Grand mal, 1-4 per year	60-90 gr. daily for 5 years	Reduced in frequency	Clerk	Clerk	None
30	♀	16	7	Grand mal, 1-4 per year	45-75 gr. daily for 6 years	Reduced in frequency	Student	Student	None
31	♀	13	7	Petit mal, 1-5 per day	66 gr. daily for 6 years	Reduced in frequency	Student	Student	None
32	♂	35	10	Petit mal, 2-3 per month	66 gr. daily for 6 years	Reduced in frequency	Physician	Physician	None
33	♀	31	34	Grand mal, 4-12 per year	66-72 gr. daily for 6 years	Eradicated	Housekeeper	Housekeeper	None
34	♀	32	12	Grand mal, 3-4 per year	66-72 gr. daily for 6 years	Reduced in frequency	Housekeeper	Housekeeper	None
35	♂	24	8	Grand mal, 3-4 per year	45-66 gr. daily for 7 years	Eradicated	Grocery clerk	Grocery clerk	None
36	♂	16	7	Grand mal, 3-4 per year	45-66 gr. daily for 7 years	Eradicated	Student	Student	None
37	♀	31	11	Petit mal, 3-4 per day Grand mal, every 3 months	66 gr. daily for 7 years	Reduced in frequency	Housekeeper	Housekeeper	None
38	♀	16	16	Grand mal, 2 per year	66 gr. daily for 7 years	Reduced in frequency and severity	Housekeeper	Housekeeper	None
39	♂	14	11	Petit mal, 1 per month to several per day	45-60 gr. daily for 8 years	Eradicated	Farmer	Farmer	None
40	♀	18	4	Petit mal, 1-11 per day Grand mal, 2 per month	66 gr. daily for 8 years	Slightly reduced in frequency	None	None	Deteriorated
41	♀	15	9	Grand mal, 1 per year to 1 per month	66-72 gr. daily for 8 years	Eradicated	Student	Cashier	None
42	♂	18	30	Petit mal, daily	60-90 gr. daily for 9 years	Eradicated	Farmer	Farmer	None
43	♂	9	12	Petit mal, 1 per week to 1 per day Grand mal, 1 per week to 1 per day	45-60 gr. daily for 10 years	Reduced in frequency and severity	Grammar school	Farmer	None
44	♀	15	14	Petit mal, 2 per month Grand mal, 1 per month	66 gr. daily for 11 years	Reduced in frequency and severity	Student	Music teacher	None
45	♂	27	11	Petit mal, 1-2 per week Grand mal, 1 per week	66 gr. daily for 11 years	Reduced in frequency and severity	Grocer	Grocer	None
46	♀	15	14	Grand mal, 2 per year	60-90 gr. daily for 11 years	Reduced in frequency	Music teacher	Music teacher	None
47	♂	20	25	Petit mal, 3-4 per year Grand mal, 1 per year	66 gr. daily for 12 years	Reduced in frequency	Bank cashier	Bank cashier	None
48	♀	5	30	Grand mal, 1-2 per month	66 gr. daily for 12 years	Reduced in frequency	Missionary	Missionary	None
49	♂	1	18	Grand mal, 1 per month to a few per day	24-60 gr. daily for 12 years	Reduced in frequency and severity	Grammar school	College student	None
50	♂	26	30	Petit mal, 1-2 per month	60 gr. daily for 13 years	Reduced in frequency	Salesman	Salesman	None
51	♂	18	42	Grand mal, 3-4 per year	60-72 gr. daily for 13 years	Eradicated	Furniture dealer	Furniture dealer	None
52	♀	31	16	Petit mal, 1-2 per week Grand mal, 3-8 per month	72 gr. daily for 16 years	Reduced in frequency	Housekeeper	Housekeeper	None
53	♀	26	22	Petit mal, 1 per month to 3 per week Grand mal, 1 per month to 3 per week	66-72 gr. daily for 16 years	Reduced in frequency	None	None	Deteriorated
54	♂	22	23	Petit mal, 3-10 per day	66 gr. daily for 17 years	Reduced in frequency	Lawyer	Lawyer	None

and not deterioration. That in many instances this intoxication has been mistaken for deterioration seems reasonable, and the observers of this intoxication have warned others against the use of bromides. But this intoxication disappears in a short time with proper reduction of the dose, while deterioration is chronic and ineradicable. This intoxication is no more deterioration than is a single episode of pronounced alcoholism.

Another reason for the undeserved bad reputation of bromides, I believe, is that bromides were given to patients who became deteriorated because of their epilepsy or its underlying cause. Some persons with epilepsy undergo mental deterioration, others do not. In a previous study of patients with epilepsy I [21] attempted to show that the occurrence of deterioration is correlated with certain factors in the patient's background and symptoms. The nondeteriorated patients come of a stock less heavily burdened with neuropathy than do the deteriorated ones; the onset in the nondeteriorated patients is later; they have attacks less frequently and they have more and longer remissions. It is these factors, I believe, that play a rôle in the occurrence of deterioration, and not the administration of bromides.

Finally, the reputation of bromides has undoubtedly suffered through their use in institutions for epileptic and mentally ill patients. Epileptic patients are sent to institutions because they are deteriorated or because they show behavior disturbances. Some days such patients are orderly; other days they are irritable, bad tempered, ugly, combative and even brutal. If bromides happened to be administered before or during such a period the bromides were held responsible, and tocsins were sounded against their use. Here, again, a sequence in time was mistaken for cause and effect. Furthermore, the use of bromides had few defenders, because practically all men who wrote on epilepsy were institution men whose judgment of the value of bromides was colored by observations, such as those quoted, and who did not know that there are large numbers of persons with epilepsy who do not undergo mental changes and who are never institutionalized. On the extramural nondeteriorated patients they were unable to make sufficient observations regarding the effects of bromides.

CONCLUSIONS

Almost all writers on the use of bromides in epilepsy have stated that, although they are efficient in eradicating or ameliorating the seizures, they are dangerous in that they sometimes produce mental deterioration.

A study of fifty-four patients with epilepsy who have taken bromides in sufficient amounts to affect the seizures for from one to seventeen years show that only three, or 5.5 per cent, became deteriorated. The occurrence of deterioration in this more adequately treated group was less than in a larger, less adequately treated group.

The misleading statements in the literature regarding the adverse effects of bromide in epilepsy are due to (1) failure to distinguish between intoxication and deterioration, (2) the use of bromides in persons with epilepsy who were destined to deteriorate without their use, and (3) the chance occurrence of behavior disturbances in insane or neurotic epileptic patients who had received bromides and in whom such behavior disorders occur without bromides.

25 East Washington Street.

ANTERIOR PITUITARY-LIKE PRINCIPLE IN THE TREATMENT OF MALDESCENT OF THE TESTICLE

SAMUEL COHN, M.D.
SAN FRANCISCO

In 1932, Engle [1] described the experimental production of descent of the testicle in immature monkeys by the injection of hormones of the anterior pituitary gland substances obtained from pregnancy urine. Since maldescent of the testicle is a condition for which the physician is not infrequently consulted, it was felt that this observation might open up a new approach to the study and treatment of this developmental defect.

INCIDENCE

The incidence [2] of undescended testicle in army recruits is reported as varying from two to five per thousand applicants. Maldescent apparently occurs more frequently on the right side, since the descent of the left testicle normally precedes that of the right. The condition of maldescent is bilateral in about 25 per cent of the cases.

SURGICAL TREATMENT

Bevan [3] advises that an operation for undescended testicle be performed in the first or second year of life. He does not believe that the testicle ever spontaneously descends between birth and puberty if the organ cannot be manually forced into the scrotum.

Cabot [4] recommended that the operation for undescended testicle be performed before the age of 9 years and feels that the earlier it is done the better the result will be.

Others [5] concur with the exponents of surgery at an early age. Higgins [5] is of the opinion that operation is always indicated when the testicle cannot be palpated.

However, the results of surgical treatment are not sufficiently encouraging to warrant the degree of assurance with which these authors have stated their opinions. Goetsch [2] reports a follow up of fifteen operations for maldescent and found that the operated testicle had developed normally in only one case. Burdick and Coley [6] in a report on 537 orchidopexies were of the opinion that 50 per cent of the operations proved satisfactory as to position of the testicle and that in about 15 per cent of the cases the testicle was normal in size. Turner [7] reports the testis to be well down after operation in 70 per cent of the cases, and Pasten [7] reports thirty-one operations with good results in 32 per cent.

The newer Torek operation seems to offer a possibility of better end results when used by competent surgeons who have made a thorough study of the technic. Harris [8] has obtained good results in 100 per cent of his series of thirty Torek operations.

From the Department of Pediatrics, Mount Zion Hospital.

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6. Burdick, C. G., and Coley, B. L.: Abnormal Descent of the Testicle, Ann. Surg. **84**: 867 (Dec.) 1926.
7. Cited by Higgins and Welti.[5]
8. Harris, F. I.: Results of Thirty Torek Operations, to be published.

Drake [9] observed maldescent of the testicle in a group of school boys over a long period of time and is of the opinion that practically all these cases will show spontaneous descent. He believes that surgery has been utilized too freely in the past. Harris [8] reported that in his series of Torek operations performed in the majority of cases on subjects past puberty the testes were usually found to be small. He advises that when operation is indicated it should be done at or after puberty.

HORMONE TREATMENT

Lower and Johnston,[10] working with normal adult rats, found that injection of the gonad-stimulating hormone of the anterior pituitary gland resulted in stimulation of the testes as well as of the prostate and seminal vesicles. Evans, Meyer and Simpson,[11] also working with rats, injected anterior pituitary-like principles. These authors state that "though the testes did not appreciably increase in weight, the accessory organs increased markedly under the influence of gonad-stimulating hormone, attaining the size characteristic of these organs in young adults." Evans [12] repeated the foregoing experiments but stated in addition that the testicles themselves actually decreased in weight and seemed to be damaged by the treatment. Butcher,[13] using anterior pituitary-like substance, also in immature male rats, found that it accelerated spermatogenesis and increased the size of the testis. Brosius and Schaffer [14] noted the repeated production of spermatogenesis following the administration of anterior pituitary-like principle in a patient with complete aspermia with bilateral testicular atrophy following orchitis. Aspermia reappeared after withdrawal of the treatment. Engle's [1] work with monkeys, which forms the stimulus for this paper, has already been mentioned.

Goldman and Stern [15] reported the use of anterior pituitary-like principle in two human subjects for treatment of maldescent of the testis. The first patient showed coexistent evidences of glandular hypofunction. The conclusions regarding the second patient, aged 15, are open to criticism because of the possibility that spontaneous improvement may occur at this age, as noted by Drake.[9] However, both patients seemed to have been benefited by the therapy.

COMMENT

Although Evans [12] has stated that anterior pituitary-like principle may damage the testicle of the immature male rat, it would seem from the other instances mentioned that such a reaction does not occur in the human being. To the contrary, certain beneficial effects seem to result, such as an increase in the size and weight of the accessory sex organs (the seminal vesicles and the prostate) and an apparent increase in the length, weight and diameter of the spermatic cord. Furthermore, testicular function is apparently restored or augmented by injection of this substance.

METHOD

Since anterior pituitary-like principle had not been used in treatment of maldescent of the testicle in the human subject when the work which forms the basis of this report was started in February 1933, an arbitrary dosage was chosen. One cubic centimeter of the commercial preparation [16] containing 100 rat units was administered subcutaneously three times weekly until ten injections had been given.

REPORT OF CASES

CASE 1.—A boy, aged 8 years, was normal in appearance and development, save for the fact that the testicles had never been noted in the scrotum. On examination the testicles were found to be located in the middle of the inguinal canal and could not be forced down past the external ring. Both testicles descended well into the scrotum after the second injection of anterior pituitary-like principle and were still there after six months.

CASE 2.[17]—A boy, aged 9 years, of generally normal appearance as to size and development, showed maldescent of the right testicle. It was at the level of the internal ring and was movable only for a short distance. The testicle descended well into the scrotum after the second injection of anterior pituitary-like principle and remained there after six months.

CASE 3.—A boy, aged 11 years, of generally normal appearance as to size and development, showed maldescent of the right testicle, which was at the midportion of the inguinal canal. It was manually reducible to the external ring. It descended six hours after the first injection of anterior pituitary-like principle and remained well down after four months.

CASE 4.—A boy, aged 7 years, showed a slight tendency toward obesity and feminine conformation. The left testicle was well down in the scrotum and apparently was normal. The right testicle was not palpable. It became palpable at the level of the internal ring after the fourth injection. It did not descend farther. This child will probably require an operation.

CASE 5.—A boy, aged 10 years, showed a definite Fröhlich syndrome. A Torek operation had been done on the right side and the testicle had been found to be markedly atrophic. The left testicle was not palpable. After eight injections of anterior pituitary-like principle it became palpable in the scrotum. Twenty injections were given and the testicle rapidly became normal in size and position. After maintaining a normal position for about six months it began to rise into the canal. Six additional injections of anterior pituitary-like principle were given with a resultant descent of the testicle well down in the scrotum. The right testicle in the meanwhile had attained a normal size and position. The child's general condition improved greatly. The obesity seemed to be redistributed in a more normal manner, the genitalia became less infantile, and a growth of fuzz appeared on the cheeks.

CASE 6.—A boy, aged 12 years, had had a Bevan operation for bilateral testicular maldescent several years previously, with complete failure on both sides. A Torek operation was done on the right side and while he was convalescing, the patient was given a course of injections of anterior pituitary-like principle. The result was entirely satisfactory. The testicle remained well down in the scrotum. Pubic hair and fuzzy hair on the upper lip appeared shortly thereafter.

CONCLUSIONS

The anterior pituitary-like principle of pregnancy urine is apparently effective in causing the descent of undescended testicles when there is no anatomic malformation to act as a mechanical obstruction. When an obstruction exists, a partial descent will occur, but operation will be required to complete the process. In surgical cases, anterior pituitary-like principle is a valuable adjunct in the production of a successful outcome.

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12. Evans, H. M.: Second Herzstein Lecture, San Francisco, Jan. 31, 1934 (to be published).

13. Butcher, E. O.: Anat. Rec. (supplement 1) **54:** 48, 1932.

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15. Goldman, Alexander, and Stern, Abner: Treatment of Undescended Testis by Injection of Prolan, New York State J. Med. **33:** 1095 (Sept. 15) 1933.

16. Antuitrin-S, Parke, Davis & Co.

17. I am indebted to Drs. Newton Shapiro, Franklin Harris and David Susnow for permission to use the data presented in cases 2, 3 and 6, respectively.

SUMMARY

Four otherwise normal children were treated for maldescent of the testicle with subcutaneous injections of anterior pituitary-like principle. Three cases evidenced complete improvement. The fourth case showed evidence of mechanical obstruction and will require operation.

A fifth case presented one operated side, which furnished an admirable opportunity for a controlled observation and showed evidences of pituitary hypofunction. Both the condition of the testicles and the general glandular hypofunction improved under the therapy.

The sixth patient was operated on again after several years and injections of anterior pituitary-like principle were used as an adjunct to surgery. The result was entirely successful as to both the condition of the testes and the general condition of the patient.

450 Sutter Street.

THE INHERITANCE OF DIABETES

PRISCILLA WHITE M.D.
ELLIOTT P. JOSLIN, M.D.
AND
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Is it possible to predict the onset of diabetes in a given individual at a given time? This question was uppermost in our minds, Dec. 17, 1931, for while we were treating a 5 year old girl for diabetic coma her solicitous similar twin sister waited nearby. Surely, we thought, if the theory of the inheritance of diabetes is correct here is an instance in which the prediction is possible. Our patient had just developed diabetes and the second twin should develop the disease and likely within a decade. April 10, 1934, the first child returned to the clinic with her twin sister. Three weeks previous to this the second twin had developed the symptoms of diabetes and her mother had found a red reduction with the Benedict test. At the clinic the diagnosis was confirmed, for the urine was found to contain 4.6 per cent of sugar and the blood 0.28 per cent.

The conception of the inheritance of diabetes is not new, for it was first described by Morton [1] in 1696 and has been emphasized by many students of the disease.[2] Inconsistencies in the series of reports are bound to arise, first, because of the short duration of the life of diabetic patients prior to the use of insulin, so that the data of family histories have been incomplete and the mode of transmission has not been demonstrable, and, second, because some schools believe in the manifold origin and character of the disease and others in its unity.[3] The former may thus select for analysis only those patients who have a positive history of inheritance, and the latter will analyze consecutive case histories. We ourselves believe in the unity of the disease —unity of symptoms, manifestations, complications and the underlying cause. On this conception of the unity of diabetes our own analyses have been made.

The evidence of the inheritance of diabetes rests primarily on three facts: (1) the concurrence of diabetes in homologous twins, (2) the greater incidence of diabetes in the relatives of a diabetic person than in a control population, and (3), indirectly, on the demonstration that mendelian ratios are found in large series of case histories selected at random and in smaller series of families tested for accuracy of diagnosis and for latency of the disease.

The concurrence of diabetes in twins has already been described in the literature.[4] This has obviously suggested the inheritance of the disease, since in 80 per cent of the cases reported the twins were of the homologous type. No analysis of dissimilar twins has been made, but from such a comparative analysis much can be learned, for, if the disease is inherited, the incidence of diabetes in both similar twins should obviously exceed the incidence in dissimilar twins. The latter, in fact, all conditions being equal, should show the same inheritance as that found among ordinary brothers and sisters.

An analysis of our own data shows that forty-one of our diabetic patients have a twin. Of this group thirteen pairs were known to be similar and thirteen dissimilar. We were compelled to exclude fifteen sets of twins because of the death of one of the twins in infancy. Among nine of the thirteen sets of similar twins both were diabetic, whereas in only two of the thirteen pairs of dissimilar twins were both diabetic. The incidence among the siblings of control, diabetic and twins populations is compared in table 2.

It is evident that an overwhelming excess occurred among the group of similar twins.

The age incidence of diabetes must be considered here, for perhaps the excess in the similar twin group could be explained on the basis of greater age. This is not the case, for although 45 per cent of the individuals in the similar twin group were in the age incidence zone of 50 years, 35 per cent of the dissimilar twins were of the same age, and the median age of the two groups was in the same decade. The family history of diabetes in the two groups of twins was nearly identical, since there were three instances of parental diabetes among the dissimilar twins and two among the similar twins.

The statistically significant difference between the occurrence of diabetes in a diabetic and a control population [5] was that 2 per cent of the parents of our control population had diabetes whereas 8 per cent of the parents of our diabetic patients had the disease. Diabetes occurred ten times more frequently in the brothers and sisters of diabetic patients than in the control group.

From the George F. Baker Clinic of the New England Deaconess Hospital and the Laboratory of General Physiology, Harvard University.

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2. These authors include:
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(b) Finke, W.: Ztschr. f. klin. Med. **114:** 713, 1930.
(c) von Noorden, Carl: Die Zuckerkrankheit, Berlin, A. Hirschwald, 1910.
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(e) Kennedy, Samuel: Hereditary Diabetes Mellitus, J. A. M. A. **96:** 241 (Jan. 24) 1931.
(f) Sherrill, J. W.: The Diagnosis of Latent or Incipient Diabetes, J. A. M. A. **77:** 1779 (Dec. 3) 1921.
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(p) Pincus, Gregory, and White, Priscilla: Am. J. M. Sc. **186:** 1 (July) 1933.
(q) Cammidge, P. J.: Lancet **1:** 393 (Feb. 24) 1934.
(r) Umber, F.: Berlin Letter, J. A. M. A. **102:** 1242 (April 14) 1934.

3. Naunyn.[2a] Joslin.[2h]

4. Curtis.[2n] White: Diabetes in Childhood and Adolescence, p. 40. Peck.[2o]

5. Pincus and White.[2p]

Criticism of such data is often given that perhaps we selected unfairly against diabetes. This is not actually the case and is substantiated by the control series of German [6] and English [7] investigators.

Expected mendelian ratios of the simple recessive type were found in our three types of crosses (diabetic × diabetic, diabetic × carrier, carrier × carrier). Among 800 odd consecutive families studied, ninety-eight diabetic patients (or 4 per cent) were found in the 2,309 siblings of the carrier × carrier cross; forty-eight (or 10 per cent) in the 475 siblings of the diabetic × carrier cross, and eight diabetic children (24 per cent) in the thirty-three instances of the diabetic × diabetic cross. If our data had been complete we would have expected more [8]—16 per cent in the first, 40 per cent in the second and 100 per cent in the third—but this could occur only if all members of the families had attained old age. The significant fact is this: The expected ratios were 1 to 2.5 to 6.1, and the actual ratios were 1 to 2.4 to 5.7.

It is on this point and the concurrence of diabetes in homologous twins that the validity both of the initial hypothesis of inheritance and of the mendelian type of transmission rests, for if the basic etiology of diabetes were due to an infection, trauma or nutritional state it is highly improbable that such an excess would occur in homologous twins and less than one chance in a million that the three ratios would be fulfiled in this manner. Actually we have identified only one fourth of the diabetic patients expected, and the next step has been the attempt to find the missing patients. There are two sources. Some may have occurred in those individuals who died of other causes before developing

TABLE 1.—*Diabetes Mellitus in Similar and Dissimilar Sets of Twins*

Set	Sex	Diabetes Mellitus	Age of Onset	Family History
Similar Twins				
1	♀ ♀	+ +	5-8	Father's mother
2	♀ ♀	+ +	13-3	Father's brother
3	♀ ♀	+ +	29-17	None
4	♂ ♂	+ 0	30	Mother's aunt
5	♂ ♂	+ +	52-47	Two sisters, mother
6	♀ ♀	+ +	62-62	Brother
7	♀ ♀	+ 0	63	None
8	♀ ♀	+ +	67-29	None
9	♀ ♀	+ +	67-19	None
10	♀ ♀	+ 0	73	Mother
11	♀ ♀	+ +	55-53	None
12	♀ ♀	+ 0	60	None
13	♂ ♂	+ +	63-56	Brother
Dissimilar Twins				
1	♂ ♂	+ ..	19-12	Cousin
2	♂ ♂	+ 0	14	None
3	♂ ♀	+ 0	19	None
4	♂ ♀	+ 0	25	None
5	♀ ♀	+ 0	42	Mother
6	♀ ♀	+ 0	48	Mother
7	♂ ♂	+ 0	52	Father
8	♀ ♂	+ 0	54	Mother's brother
9	♀ ♂	+ 0	59	None
10	♀ ♂	+ 0	56	None
11	♂ ♂	+ 0	62	None
12	♂ ♂	+ 0	60	None
13	♂ ♂	+ +	62-62	None

diabetes and some will be found among people who have not reached the diabetic danger zone of middle life. The remainder of the problem depends on the time or age behavior of the disease and the nondiabetic lethal factors. The validity of time behavior or age incidence of diabetes is undoubted, for in each consecutive thousand of our cases, our cases compared with those of other clinics, and in American clinics as compared with European clinics the incidence behavior is essentially the same. From these two factors the potentiality for developing diabetes in parents and children has been predicted.[9]

Although these data seem obviously convincing, besides dealing with a population whose status is changing—once diabetic always diabetic, but once nondiabetic not always nondiabetic—another source of confusion is possible. Dependent on case histories, some individuals classified as diabetic may be nondiabetic and some classified as nondiabetic may actually be diabetic. Therefore, a series of control and another of diabetic families were studied for symptoms and tested with routine blood sugar tests and with tolerance tests.

TABLE 2.—*Incidence of Diabetes in a Control, Diabetic and Twin Population*

Type of Population	Number of Individuals	Per Cent of Siblings With Diabetes
Control	153	0.6
Diabetic	523	6.0
Dissimilar twins	13	16.0
Similar twins	13	70.0

Relative hyperglycemia was characteristic of the families of diabetic individuals, no matter whether the examinations were routine or by tolerance test: 14 per cent in the 169 persons tested by routine and 25 per cent in the 95 persons examined by tolerance test were diabetic in type, as compared with 2 per cent in the control population. These cases were not classified as diabetic and not utilized in our calculations, because we have dealt only with clinical cases of diabetes and not with potential diabetes. Time alone will reveal the significance of the latter observations. The tested selected families on the basis of clinical diabetes confirmed the consecutive case histories.

CONCLUSIONS

1. Each member of similar twins developed diabetes more than four times as frequently as each member of dissimilar twins; namely, 70 per cent of the former and 16 per cent of the latter.

2. The incidence of diabetes in the relatives of a diabetic population is significantly greater than in a nondiabetic group.

3. Mendelian ratios were found in a consecutive series of diabetic cases and in a selected mendelian population tested by histories and blood sugars.

4. Many blood relatives of diabetic patients have symptomless hyperglycemia the significance of which is unknown. These instances occurred when one would expect diabetes to develop according to mendelian inheritance.

5. We believe that the potentiality for developing diabetes is transmitted as a simple mendelian recessive trait and that the secondary factors which permit the expression of the gene can best be studied among predestined diabetic patients; namely, homologous twins of diabetic patients and the offspring of two diabetic patients.

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6. Finke.[2b]
7. Cammidge.[2a]
8. (*a*) Pincus, Gregory, and White, Priscilla: Am. J. M. Sc., to be published; (*b*) footnote 8*p*. Corrections have been made for bringing families into series because one was a known diabetic patient.
9. Pincus and White.[8a]

Clinical Notes, Suggestions and New Instruments

DETECTION OF FREE ACID IN PATIENTS WITH SUSPECTED ANACIDITY

HEINRICH NECHELES, M.D., AND LOUIS SCHEMAN, M.D., CHICAGO

In examining a great number of patients with peptic ulcer or with subtotal gastrectomies, one is often faced with the problem of an apparently complete anacidity and a lack of response of the acid secretion of the stomach even to histamine, in patients who complain about heartburn, belching of sour material, and the like. Sometimes examination of the stomach contents of such persons right after sampling but before filtration reveals a strong positive reaction for free acid (Töpfer's reagent) on the surface of the mucous material only. This soon disappears, especially after filtration. Such cases cannot be called anacid but under the conditions of an ordinary stomach test would so appear. Evidently the little free hydrochloric acid that is present combines quickly with the mucus, which in most of these cases is abundant. In other cases, regurgitation from the duodenum is the neutralizing factor. We therefore devised a method by which the reaction of each small sample of gastric contents can be tested as soon as it passes out of the stomach.

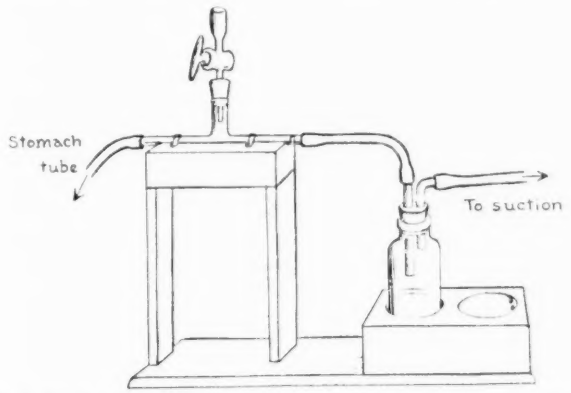

Diagram of apparatus devised to test sample of gastric contents as soon as it passes out of stomach tube.

The apparatus used is here illustrated. It consists of a glass T tube, the vertical arm of which is wide enough to hold a stopper with a bore. The lower end of a buret is used, the glass tube below the stopcock being pushed through the bore of the stopper. The opening of this glass tube is made as narrow as possible. One end of the T piece is connected to a suction device with a mercury manometer and needle valve. The other end of the T tube is connected to the stomach tube. The container above the stopcock is filled with Töpfer's reagent. Small sealed glass tubes with various concentrations of hydrochloric acid and Töpfer's reagent may conveniently be attached alongside the horizontal part of the T tube to read the concentration of free acid in the gastric juice. The base of the wooden stand on which the T tube rests is painted white. As the suction works and gastric contents appear in the T tube, the stopcock is opened, permitting a drop of reagent to come in contact with the stomach juice, and notes are taken of the color reaction. Mucus, bile and pure stomach juice can thus be tested separately before neutralization takes place. This method has proved so successful in our hands that it may be of interest to others. Since we have begun to use it, we have been able to demonstrate free acidity in eighteen out of twenty patients with subtotal gastrectomies.

Twenty-Ninth Street and Ellis Avenue.

From the Department of Gastro-Intestinal Physiology Nelson Morris Research Institute, Michael Reese Hospital.

We are indebted to Drs. Alfred and Sigfried Strauss and Jacob Meyer for sending us patients for these tests.

This study was carried on by the aid of a grant from the Louis L. Cohn and Kuppenheimer funds to the Stomach Group of the Michael Reese Hospital.

DEATH FOLLOWING PHRENICECTOMY

JOHN WEBER, M.D., GLENDALE, CALIF.

Death following phrenicectomy, a relatively simple operation, is rare. In Sauerbruch's series of 300 operations there was only one operative death.[1] A branch of the short thyrocervical artery, sometimes encountered in the fat between the fascia beneath the platysma muscle and the scalenus anticus muscle, was severed. In order to check the hemorrhage the subclavian artery was ligated but the patient died.

This report describes a cause of death following this operation, which I believe has not previously been related in the medical literature. I wish also to suggest a second operation which might have saved the patient's life.

A man, aged 33, unmarried, an American, gave a history of chronic pulmonary tuberculosis of ten years' duration, six of which he had spent in bed. Physical examination revealed a far advanced, active, fibrocaseous tuberculosis of the right lung with cavity formation involving practically the entire upper lobe. There was also a moderate amount of tuberculous infiltration of the upper lobe of the left lung. Roentgenograms of the chest confirmed the physical examination and the sputum showed myriads of tubercle bacilli. During each twenty-four hour period the patient raised from 5 to 6 ounces of mucopurulent sputum. The temperature remained practically normal with bed rest. His weight, while stationary during the six months preceding operation, was 30 pounds (13.6 Kg.) below the average for his age and height.

Artificial pneumothorax was attempted five times unsuccessfully. A phrenicectomy was advised, to be followed later by a paravertebral thoracoplasty.

Phrenicectomy was performed and was followed by gradually increasing dyspnea, cardiac failure and death in six days. It was not possible to obtain postoperative roentgenograms of the chest, but physical examination following operation demonstrated an elevation of the right diaphragm from the sixth to the fourth rib in the mammary line and a deviation of the heart into the left side of the chest, measuring 4 cm. The resultant mechanical interference with cardiac movement was the cause of death.

BENEFIT OF PHRENICECTOMY

Unfortunately for the patient, I did not consider the benefit that might have followed a left phrenicectomy, or, better still a simple crushing of the phrenic nerve with a hemostat combined with cutting of the accessory nerves. The latter operation would have caused only a temporary paralysis of the left diaphragmatic leaf. If either of these operations had been performed, the left diaphragm probably would have ascended sufficiently upward into the thorax to force the heart back into its normal position, thus relieving the complication. I believe now that the second operation should be performed in the presence of this particular complication.

Bilateral phrenicectomy or simple phrenicotomy has been used with marked success for persistent singultus and to permit artificial respiration in diaphragmatic tetanus by Sauerbruch,[2] Kroh,[3] Jehn,[4] Lehman[5] and Dehler and Stern.[6] Unfortunately the value of this relatively simple operation, particularly for the relief of persistent and often fatal hiccups, is not generally appreciated. It will not only effect a cure when all other measures have failed but also causes, as a rule, only a temporary embarrassment of respiration.

Glendale Professional Building.

From the University of Southern California School of Medicine, Los Angeles.

1. Ziegler, O.: Bekämpfung der Lungentuberkulose durch Ruhigstellung der Lunge, Ztschr. f. Tuberk. **40:** 485, 1924.
2. Sauerbruch, F.: Die Chirurgie der Brustorgane, ed. 2, Berlin, Julius Springer **1,** 1920.
3. Kroh, Fritz: Die temporare Ausschaltung der Nerven phrenicus, Deutsche med. Wchnschr. **47:** 925 (Aug. 11) 1921.
4. Jehn, Wilhelm, cited by Goetze.
5. Lehman, cited by Sauerbruch.[2]
6. Dehler and Stern, cited by Goetze, Otto, in discussion on Sauerbruch, F.: Der Stand der Chirurgie der Brustorgane auf Grund der Entwicklung in der letzen 20 Jahren, Deutsche Gesellsch. f. Chir., Berlin, 23-26. April 1924; reported in Zentralbl. f. Chir. **51:** 1278, 1282, 1924; also in Berlin Letter, J. A. M. A. **83:** 135 (July 12) 1924 and in Zentralbl. f. d. ges. Tuberk.-Forsch **22:** 500, 1924.

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE.—*In their preparation, these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr. Bernard Fantus. The views expressed by the various members are incorporated in the final draft prepared for publication. The series of articles will be continued from time to time in these columns.*—ED.

THERAPY OF FRESH ACCIDENTAL WOUNDS

The therapy of fresh accidental wounds must meet four general indications: check hemorrhage, treat shock, render the wound asceptic and put the affected part at rest, and restore the part to the greatest possible degree of usefulness.

Hemorrhage may be checked by pressure (tourniquet, bandage), elevation or heat (120° F.). See also "Therapy of Bleeding."

Shock may be treated by analgesia, recumbency and heat. See also "Circulation Deficiency Crises."

The wound should be rendered aseptic and closed according to approved surgical principles as soon as this has probably been accomplished. An aseptic wound is one that heals by first intention without signs of excessive inflammation and without constitutional disturbance. It need not necessarily be sterile, i. e., completely free from micro-organisms. Asepsis is a clinical concept; sterility, a bacteriologic term.

As an emergency dressing, the wound should be covered with the cleanest (most nearly sterile) possible absorbent material. The skin surrounding the wound (but not the wound itself) may be painted with antiseptic solution of iodine (2 per cent in 50 per cent alcohol). As soon as possible thereafter, with aseptic (operating room) technic, (1) contamination should be removed, (2) culture medium for micro-organisms should be removed, (3) the affected part should be immobilized, (4) local tissue reaction should be improved and (5) systemic resistance should be improved.

1. Contamination should be removed as thoroughly as possible, meaning at least all visible dirt. First, the part surrounding the wound is scrubbed with soap, brush and sterile water (and with ether or gasoline if nonsaponifiable fatty matter is a contaminant, while the wound is kept covered with sterile gauze. Then the skin surrounding the wound may be painted with antiseptic solution of iodine. Secondly, the wound itself should be cleansed with neutral soap and gently wiped with sterile gauze sponges and irrigated with sterile water. Ether or gasoline may have to be used to remove soap-insoluble grease. Solution of hydrogen dioxide has quite a cleansing value for dirt ground into flesh and for the removal of crusts and clots, but it should not be used unnecessarily. Chemical disinfectants probably have no place in this cleansing process: they are apt to damage tissue cells more than they harm micro-organisms. Good wound healing depends as much on the vitality of the cells on the wound surface as on the absence of micro-organisms, and probably more. If anesthesia is required for the treatment of the wound, nitrous oxide-oxygen inhalation is the agent of choice, as it aggravates shock less than any of the other anesthetics.

2. All culture medium for micro-organisms should be removed, and its accumulation prevented.

(*a*) Débridement removes all undoubtedly irremediably damaged tissue. The aim should be to secure as nearly as possible fresh and clean wound surfaces so that they may heal by primary union and without drainage. All hemorrhage should be checked, for a hematoma means culture medium and inevitable infection.

(*b*) When a complete débridement is inadvisable because of the functional importance of the tissue that would have to be sacrificed, a chance may be taken that the tissue might be viable and the wound closed with the exception of a small drain, which should be removed as soon as possible. Drainage is not so much for the purpose of serving for the escape of micro-organisms as for the removal of fluid exudate, the accumulation of which under these circumstances determines infection.

(*c*) The Carrel-Dakin technic of contaminated wound disinfection should be instituted in very extensive, grossly mutilated wounds with much more or less devitalized tissue, after as thorough débridement as advisable and after the wound has first been converted into an open surface down to its very depth. Secondly, irrigating tubes are inserted into every nook and corner of the wound, and the surface is so postured as to make a trench in which surgical solution of chlorinated soda may be kept in contact with the tissue as thoroughly as possible. Fresh solution is introduced into the wound at intervals of every two hours, because by that time the fluid will have lost its disinfecting value. The chief virtue of this solution is that it renders necrotic tissue unsuitable for the growth of micro-organisms and favors its solution. The skin surrounding the wound should be protected with petrolatum, because the fluid is irritating. As soon as all necrotic tissue has been removed and the wound looks clean, an attempt at secondary union should be made, the wound surfaces being freshened if necessary. The making of bacterial counts from the wound surfaces is helpful to determine the amount of infection present.

3. The affected part should be absolutely immobilized immediately after the injury to prevent as much as possible the dissemination of micro-organisms. Since it is impossible to sterilize such wounds, the prevention of systemic invasion, as well as of extensive spread to surrounding tissues, depends on the speediest possible formation of a fibrin network (which occurs within half an hour) and its protection against rupture so that it may serve as scaffolding for the ensuing round cell infiltration. The immobilization also favors inception of healing. As soon, however, as no further danger of spread of infection is present and sufficient union of tissue has occurred to permit motion without rupture, gradual resumption of function should be insisted on.

4. Local tissue reaction should be improved, chiefly by antagonizing edema, the part being elevated if possible, and proximal constriction being prevented; but allowance should be made for a certain amount of inevitable swelling by not drawing the sutures tight and by rather loose bandaging. Evidence of infection means immediate recourse to hot, moist dressings and the earliest possible release of accumulated fluid.

5. Systemic resistance should be improved. Because of the seriousness of tetanus, with all wounds that are

deep and liable to harbor unremovable earth or street dirt, tetanus antitoxin (1,500 units unless the wound is very extensive, then 5,000 units) should be administered immediately. Still better is the combination of tetanus and gas bacillus antiserum in the prophylactic treatment of all severe wounds. In especially endangered wounds, a second dose should be given within a week. A dose should also be administered before the undertaking of a secondary operative procedure on such a wound. The antitoxin is not required in slight, superficial or uncontaminated cuts and bruises in which mere iodinization suffices to destroy the contaminating micro-organisms, even though it may delay the healing process.

Needless to say, an abundance of sleep and a nutritious diet, suitable for the individual, are of importance in securing the promptest possible recovery.

Efficient treatment of any systemic abnormality, be this syphilis, or diabetes, nephritis or anemia, will also contribute to expedite healing. Every surgical case is, therefore, also a medical case.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

DIODRAST.—3.5-*di*iodo-4-pyridone-*N*-acetic acid and diethanolamine. — $C_5H_2ONI_2.CH_2.COOH + NH(CH_2CH_2OH)_2$. — A mixture or a loose combination (in solution) of diethanolamine, $NH(CH_2CH_2OH)_2$ and 3.5-*di*iodo-4-pyridone-*N*-acetic acid, $C_5H_2OHNI_2CH_2.COOH$ in equimolecular quantities. Diodrast contains approximately 49.8 per cent of iodine.

Actions and Uses.—Diodrast is proposed as a contrast agent for intravenous urography. Local reactions about the site of injection are said usually not to occur or to be very mild when they are observed; systemic reactions occur occasionally. The latter consist chiefly of flushing of the skin with a sense of warmth; less often transient nausea, vomiting, erythematous eruptions, respiratory distress and cyanosis may occur. These side effects are said usually to subside within a few minutes to an hour or so without special therapy, but the skin eruptions may rarely persist for several days. In animals, diodrast in doses equivalent by weight to those used clinically has been found to lower the blood pressure for a period of about two hours; this slowly returns to normal and may be followed by a secondary rise; at the same time, respiration is stimulated. These actions have been reported also to occur in the human being. Fasting and dehydration of patients preliminary to injection of the drug are widely employed. The optimum time for taking roentgenograms varies between five and fifteen minutes after injection in individuals with normal kidney function (usually one exposure is made after ten minutes and a second after a further interval of ten or fifteen minutes). When renal function is impaired, this interval is proportionately longer (thirty minutes or more). Pressure over the bladder is employed by some clinicians; this is released immediately before the first exposure and is replaced until the next. The use of the drug is contraindicated in patients with severe liver disorders, nephritis, tuberculosis or hyperthyroidism, and great care must be exercised in cases of uremia. Preliminary renal and hepatic function tests are advisable in suspected cases. Caution should be exercised in cases in which a reduction in blood pressure would be dangerous or otherwise undesirable.

Dosage.—Twenty cc. of a solution containing 7 Gm. of diodrast, previously warmed to body temperature, is injected slowly, usually into the cubital vein. Children are given correspondingly smaller doses. Diodrast is administered intravenously in the form of an aqueous solution; each cubic centimeter contains 0.35 Gm.

Manufactured by Winthrop Chemical Co., Inc., New York. U. S. Patent and Trademark applied for.

Diodrast Sterile Solution (35 per cent, weight/volume), 10 cc. size ampule: 10 cubic centimeters contains diodrast 3.5 Gm.

Diodrast Sterile Solution (35 per cent, weight/volume), 20 cc. size ampule: 20 cubic centimeters contains diodrast 7.0 Gm.

Diodrast responds to the following identity tests: Dilute about 10 cc. of diodrast solution with an equal volume of water, add an excess of diluted hydrochloric acid; collect the liberated 3.5-*di*iodo-4-pyridone-*N*-acetic acid on a filter paper, wash and dry at 100 C.: it melts with decomposition between 245 and 249 C. (the melting point bath previously heated to 200 C.) (Save the filtrate.*) Transfer about 0.1 Gm. of the resultant acid to a small hard glass test tube containing a piece of sodium (about the size of a pea), previously melted; after the first violent action has ceased, heat until the contents of the test tube are decomposed: vapors of iodine are evolved; the tube and contents are allowed to cool; add 10 cc. of water; boil the mixture for a few minutes; filter through paper and divide into two portions; to one portion add 1 cc. of concentrated nitric acid, boil, cool and add 1 cc. of silver nitrate solution: a curdy yellow precipitate results, insoluble in an excess of stronger ammonia water; to the other portion add a few drops of fresh ferrous and ferric sulphate solutions, heat to nearly boiling and carefully neutralize with diluted hydrochloric acid: a finely divided blue precipitate results. Concentrate the original filtrate from the foregoing,* cool in ice water, filter, evaporate to syrupy consistency, add 5 cc. of alcohol, neutralize the mixture carefully with normal sodium hydroxide using litmus as an indicator, filter and increase the volume of the filtrate to about 10 cc. with absolute alcohol, add 1 Gm. of trinitrophenol (picric acid), heat to boiling and finally cool in ice water; collect the resulting *di*ethanolamine trinitrophenolate on a filter paper, recrystallize from alcohol and dry in a desiccator over sulphuric acid under a partial vacuum: it melts at 245 to 249 C., with decomposition (the melting point bath previously heated to 200 C.).

Dissolve about 1 Gm. of the resultant acid in 1.5 cc. of a 10 per cent solution of sodium hydroxide and make up to a volume of 3 cc.: a clear colorless solution results. To the foregoing solution add 7 cc. of water and an excess of diluted hydrochloric acid, filter, and divide the filtrate into two portions; to one portion add 1 cc. of chloroform and 0.1 cc. of ferric chloride solution: no coloration is imparted to the chloroform layer *(absence of free inorganic iodides);* to the other portion add 1 cc. of barium chloride solution: no turbidity results *(sulphate).*

*Di*iodo-4-pyridone-*N*-acetic acid, a component of diodrast, responds to the following tests for identity and purity.

*Di*iodo-4-pyridone-*N*-acetic acid occurs as a white crystalline odorless powder; slightly soluble in water; practically insoluble in organic solvents. It melts at 245 to 249 C., with decomposition (the melting point bath previously heated to 200 C.).

*Di*iodo-4-pyridone-*N*-acetic acid responds to identity and purity tests previously described under diodrast, except those dealing with diethanolamine.

Dry about 1 Gm. of diodrast acid component, 3.5-*di*iodo-4-pyridone-*N*-acetic acid, accurately weighed, to constant weight at 100 C.: the loss in weight does not exceed 1 per cent. Transfer about 1 Gm. of Diodrast acid component, accurately weighed, to a 500 cc. kjeldahl flask and determine the nitrogen content according to the official method described in Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists, third edition, page 20, chapter 2, paragraph 22: the percentage of nitrogen corresponds to not less than 3.3, nor more than 3.6 when calculated to the dried substance. Transfer about 0.5 Gm. of the diodrast acid component to a Parr sulphur bomb; determine the iodine content by the Lemp and Broderson Method (*J. A. Chem. Soc.* **39:** 2069): the amount of iodine found corresponds to not less than 62.3 per cent, nor more than 63.2 per cent when calculated to the dried substance.

DIODRAST STERILE SOLUTIONS

Diodrast solution is prepared by neutralizing 3.5-*di*iodo-4-pyridone-*N*-acetic acid in water with an equimolecular quantity of diethanolamine. The mixture thus formed in solution (not isolated in solid form) is very soluble in water.

Diodrast solution occurs as a clear and nearly colorless liquid. It is neutral to litmus. Diodrast solution is incompatible with mineral acids. The specific gravity is from 1.180 to 1.190 at 25 C.

Place 10 cc. of diodrast solution, accurately measured, in a suitable tared platinum dish, evaporate to dryness on the steam bath and ignite: the residue does not exceed 0.10 per cent.

Transfer 10 cc. of diodrast solution, accurately measured, to a suitable glass stoppered erlenmeyer flask, neutralize with normal hydrochloric acid, adding a very slight excess; cool the flask and contents to about 5 C., collect the precipitate formed in a tared gooch crucible, wash with cold diluted acid solution, dry to constant weight at 100 C.: the weight of 3.5-*di*iodo-4-pyridone-*N*-acetic acid obtained corresponds to not less than 2.7 Gm. nor more than 2.8 Gm. The free acid corresponds to the standards given under diodrast.

Note.—The assay by precipitation with a mineral acid is roughly approximate; it is important that as nearly exactly the specified amount of diodrast solution as possible be used, because the solubility of the 3.5-*di*iodo-4-pyridone-*N*-acetic acid precipitate varies. This assay method of standardization is therefore at best approximate and must be considered tentative until such time as more accurate analytic procedure is available.

THIO-BISMOL (See New and Nonofficial Remedies, 1934, p. 123).

The following dosage form has been accepted:

Ampoules Thio-Bismol, 2 Gm.: Each ampule contains 2 Gm. (30 grains) of thio-bismol, to be dissolved in 20 cc. of sterile distilled water before administration.

METHENAMINE (See New and Nonofficial Remedies, 1934, p. 212).

Urotropin.—A brand of methenamine-U. S. P.

Manufactured by Schering & Glatz, Inc., New York. U. S. trademark 269,754.

Urotropin Tablets, 5 grains (0.3 Gm.).
Urotropin Tablets, 7½ grains (0.5 Gm.).

POLLEN EXTRACTS-SWAN-MYERS (See New and Nonofficial Remedies, 1934, p. 40).

The following dosage form has been accepted:

Mixed Ragweed Pollen Extract Decimal Dilution Set: A mixture of equal parts of short and giant ragweed pollen extract, marketed in packages of five vials containing, respectively, 5 cc. of a 1:100,000 dilution (10 pollen units per cubic centimeter), 5 cc. of a 1:10,000 dilution (100 pollen units per cubic centimeter), 5 cc. of a 3 per cent dilution (30,000 pollen units per cubic centimeter), 5 cc. of a 1:100 dilution (10,000 pollen units per cubic centimeter), and 0.5 cc. of a 3 per cent dilution (30,000 pollen units per cubic centimeter).

Manufactured by the Abbott Laboratories, North Chicago, Ill. No U. S. patent or trademark.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING GENERAL DECISION. RAYMOND HERTWIG, Secretary.

SWEETS IN THE DIET, ESPECIALLY OF CHILDREN

The adequate nutrition of children and adults requires careful selection of foods both as to kind and as to quantity. Each type of food has a proper place in the diet. A well balanced diet, including ample proteins, fats, carbohydrates, minerals, vitamins and roughage, is one of the prime requisites for growth and health. Sweets consisting essentially of sugars are likely to be taken in excess because of their highly pleasing flavor. They supply energy only for body activity. Although sweets are wholesome and valuable foods when given their proper place in the balanced diet, they contribute few or none of the structural components required for good nutrition. Common concentrated sweets used to excess are harmful, especially in the case of children, so far as they impair the appetite for other highly necessary foods and lead to a reduced intake of milk, eggs, fruits, vegetables, meat and cereals.

Food advertising that obscures the facts of good nutrition by encouraging too liberal use of sweets should be condemned.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

CALIFORNIA HOME BRAND CHILI SAUCE

Manufacturer.—California Conserving Company, Inc., San Francisco.

Description.—Chili sauce containing tomatoes, sucrose, distilled vinegar, onions, sodium chloride, cassia, mace, cloves, garlic, celery seed, chilies and pepper.

Manufacture.—Vine ripened sorted tomatoes, specially grown, are spray washed, scalded, again spray washed, hand peeled and cored, and cooked with the named spices (in cotton bags), sugar and salt for twenty minutes. The spice bags are removed, distilled vinegar is added, steam is turned off and a sample is drawn for laboratory test. When refractometer, mold count, color and consistency tests indicate that the product has reached the required standards, the mass is automatically bottled at 88 C. and cooled.

Analysis (submitted by manufacturer).—

	per cent
Moisture and volatile substances	66.4
Ash	4.5
Fat (ether extract)	0.4
Protein (N × 6.25)	3.0
Reducing sugars as invert sugar	8.1
Sucrose	16.9
Crude fiber	0.4
Titratable acidity as citric acid	1.7
Volatile acid	1.0

Calories.—1.2 per gram; 34 per ounce.

Claims of Manufacturer.—The speed of handling tomatoes from field to finished product keeps mold and bacteria at a minimum and protects tomato flavor and color.

STOKELY'S FOR BABY SPECIALLY PREPARED STRAINED TOMATOES

SEASONED WITH SALT

Manufacturer.—Stokely Brothers & Company, Inc., Indianapolis.

Description.—Pasteurized sieved tomatoes, seasoned with salt, largely retaining the natural vitamins and minerals.

Manufacture.—Sound tomatoes at the height of color and flavor are washed in troughs of running water, rolled through reel washers equipped with water sprays for thorough rinsing, sorted and trimmed on continuous belts, and the underripe and overripe fruit eliminated. The selected clean tomatoes are sliced, passed through a preheating chamber containing an atmosphere of steam, comminuted, canned and processed as described for Stokely's Strained Green Beans (THE JOURNAL, May 26, 1934, p. 1763).

Analysis (submitted by manufacturer).—

	per cent
Moisture	93.1
Total solids	6.9
Ash	0.9
Sodium chloride	0.4
Fat (ether extract)	0.1
Protein (N × 6.25)	1.1
Reducing sugars as dextrose	3.2
Sucrose (copper reduction method)	0.0
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	4.5
Alkalinity of ash (cc. normal acid per gram ash)	5.7
*p*H	4.7

Calories.—0.2 per gram; 6 per ounce.

Vitamins.—Selection of vine ripened tomatoes, vacuumizing to remove air naturally in the tomatoes, the exclusion of air throughout the preparation and processing of the juice, insure a high retention of the natural vitamins. An excellent source of vitamin C and a good source of vitamins A and B.

Claims of Manufacturer.—Supplementary to the infant milk diet, and valuable for children and adults on soft diets. Has smooth consistency and supplies desirable bulk without roughness. The straining renders the nutrient content readily available for digestion. Scientifically prepared to retain in high degree the natural flavor, mineral and vitamin values. Seasoned to bring out full flavor and packed in enamel lined cans. Requires only warming for serving.

KEYSTONE SILVER LABEL GELATIN
KEYSTONE SPECIAL B. A. I. GELATIN
KEYSTONE "CONFECTIONERS' OO" GELATIN
KEYSTONE "CONFECTIONERS' O" GELATIN
KEYSTONE "MIXRITE" GELATIN
KEYSTONE "WHIPRITE" GELATIN
KEYSTONE "AA" GELATIN
KEYSTONE "XLO" GELATIN
KEYSTONE "EASYMIX" GELATIN
KEYSTONE NO. 546 GELATIN
KEYSTONE NO. 431 GELATIN
KEYSTONE "JELRITE" GELATIN
KEYSTONE "KWIKJEL" GELATIN

Manufacturer.—The American Agricultural Chemical Company, Detroit.

Description.—Plain, unsweetened, unflavored gelatins made from hard bones, green salted calfskin trimmings and frozen pigskins; graded on the basis of jelly strength for special uses.

Manufacture.—Bones, after leaching with hydrochloric acid to remove the mineral phosphate, and washed calfskins are immersed in a milk of lime solution for several weeks. After removal they are washed and placed in boiling water in tanks. The thawed pigskins are treated with hydrochloric acid, washed, and placed in the boiling water vats. The ossein of the bone and the collagen of the skins are hydrolized and a solution of gelatin is formed, several runs of which are taken off at increasingly higher temperatures, the runs decreasing in gel strength. These various runs are blended in accordance with predetermined schedules, concentrated in a vacuum pan, filtered and jellied into a flexible sheet on a refrigerated belted conveyor. The sheet is cut, placed on aluminum wire frames and dried

to 10-12 per cent moisture content. The dried gelatin is laboratory tested, ground, screened and placed in paper lined barrels for shipment. The ground gelatin of the different runs may be blended to produce any one of the market grades. Keystone Silver Label Gelatin is left in sheet form and wrapped in individual packages.

Analysis (submitted by manufacturer).—

(Range of analyses for all grades.)	per cent
Moisture	11.0–13.0
Ash	0.3– 2.0
Fat (ether extract)	0.0– 0.0
Protein (N × 5.55)	82.0–85.0
Carbohydrates	0.0– 0.0
*Jelly strength of different grades	75–250 Bloom
	parts per million
Arsenic (As)	0.0– 1.0
Copper (Cu)	0.0–20.0
Zinc (Zn)	0.0
Lead (Pb)	0.0
Sulphur dioxide (SO_2)	0.0
Added preservatives	none

* Official Bloom method of the Edible Gelatin Manufacturers Research Society of America.

Calories.—3.3 per gram; 94 per ounce.

Claims of Manufacturer.—For use in normal and restricted diets and in all food gelatin preparations.

DU BARRY'S FOOD

Manufacturer.—Du Barry and Company, San Francisco.

Description.—Powdered mixture of bolted hulled red lentils (U. S. and India grown) and barley.

Manufacture.—Red lentils, grown in the United States and India, and barley are individually cleaned, scoured, bolted, dried, ground and bolted. Definite proportions of the barley and lentil flours are mixed and canned.

Analysis (submitted by manufacturer).—

	per cent
Moisture	7.8
Ash	1.7
Fat (ether extract)	0.9
Protein (N × 6.25)	22.4
Reducing sugars as dextrose	trace
Sucrose (copper reduction method)	5.1
Starch (diastase method)	56.7
Dextrins (alcohol method)	4.6
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	66.4
Iron (Fe)	117 parts per million
Copper (Cu)	8 parts per million
*Potential alkalinity	6

* J. Biol. Chem. **11:** 323-338, 1912.

Calories.—3.6 per gram; 102 per ounce.

Vitamins.—56 Sherman and Spohn vitamin B complex units per ounce.

Claims of Manufacturer.—Effect on Curd Tension of Boiled, Pasteurized and Certified Milks: A gruel was prepared by cooking in a double boiler for twenty minutes 28 Gm. of Du Barry's Food, 7 Gm. of sodium chloride and one-half pint of water. This quantity of gruel was added to 710 cc. of raw, pasteurized and cooked milk (boiled two minutes) respectively.

The curd tensions and curd tension reductions of the different lots of modified and unmodified milks, as determined by the Hill method,* follow:

	Curd Tension, Gm.	Curd Tension Reduction, Per Cent
1. Du Barry's Food and boiled milk	15	17
2. Control, boiled milk	18	..
3. Du Barry's Food and pasteurized milk	41	23
4. Control, pasteurized milk	53	..
5. Du Barry's Food and certified milk	33	50
6. Control, certified milk	65	..

* Bull. 227, Utah Agricultural Experiment Station, June, 1931.

A good source of iron, copper and vitamin B complex.

For adding to milk for infant feeding in accordance with the directions of the physician.

BURNETT'S SLICED BREAD

Manufacturer.—Burnett Baking Company, Greenville, Texas.

Description.—Sliced white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, water, sucrose, shortening, powdered skim milk, yeast, sodium chloride, malt extract and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

STRAINED BEETS, CARROTS, CELERY, GREEN BEANS, PEAS, PRUNES FLAVORED WITH LEMON JUICE, SPINACH, TOMATOES, AND VEGETABLES WITH CEREAL AND BEEF BROTH

UNSEASONED

(1) A-C BRAND
(2) ARISTO BRAND
(3) DOT
(4) EAVEY'S E BRAND
(5) I. G. A.
(6) IOWA MAID
(7) KO-WE-BA BRAND
(8) OPAL
(9) PLEE-ZING
(10) RE-JOYCE BRAND

Distributors.—(1) The W. L. Adamson Co., Dayton, Ohio; (2) Market Wholesale Grocers, Inc., Chicago; (3) The Janszen Co., Cincinnati; (4) A. H. Perfect & Co., Fort Wayne, Richmond and Huntington, Ind., Xenia, Ohio, and Sturgis, Mich.; (5) Independent Grocers Alliance Distributing Co., Chicago; (6) and (8) Charles Hewitt & Sons Co., Des Moines, Iowa; (7) Kothe, Wells & Bauer Co., Indianapolis; (9) Plee-Zing, Inc., Chicago; (10) Joyce-Laughlin Co., Peoria, Ill.

Packer.—The Larsen Company, Green Bay, Wis.

Description.—Respectively sieved beets, carrots, celery, green beans, peas, prunes flavored with lemon juice, spinach, tomatoes and vegetables (carrots, potatoes, tomatoes, celery, peas, beans, spinach) with pearl barley and beef extract; prepared by efficient methods for retention in high degree of the natural mineral and vitamin values. No added sugar or salt. These products are the same as the respective accepted Larsen's vegetables and fruits (THE JOURNAL, July 1, 1933, p. 35; July 8, 1933, p. 125; July 22, 1933, p. 282; July 29, 1933, p. 366; Aug. 12, 1933, p. 525; Aug. 19, 1933, p. 605; Aug. 26, 1933, p. 675; Sept. 2, 1933, p. 779).

MILTON QUALITY TOMATO JUICE

Distributor.—M. I. Kimball & Company, Lawrence, Mass.

Packer.—Vincennes Packing Corporation, Vincennes, Ind.

Description.—Pasteurized tomato juice with added salt; retains in high degree the natural vitamin content of the raw juice. The same as Vincennes "Class A" Brand Tomato Juice, THE JOURNAL, March 19, 1932, page 983.

BELMONT BRAND EVAPORATED MILK
BROOKMONT BRAND EVAPORATED MILK
HANDY BRAND EVAPORATED MILK
HURON BRAND EVAPORATED MILK
KEYSTONE BRAND EVAPORATED MILK
UNITED BRAND EVAPORATED MILK
UNSWEETENED STERILIZED

Manufacturer.—The United Dairy Company, Barnesville, Ohio.

Description.—Canned unsweetened sterilized evaporated milk.

Manufacture.—The milk is collected from farms inspected by the city of Pittsburgh and the department of health of the state of Pennsylvania. On receipt at the factory the milk is examined, condensed, homogenized, standardized under laboratory control to conform to the stipulated analysis for this product, sealed in cans and sterilized according to standard procedures (THE JOURNAL, April 16, 1932, p. 1376).

Analysis (submitted by manufacturer).—

	per cent
Moisture	73.8
Ash	1.4
Fat (ether extract)	7.8
Protein (N × 6.38)	8.5
Lactose (by difference)	8.5

Calories.—1.4 per gram; 40 per ounce.

Claims of Manufacturer.—See announcement on the advertising of the Evaporated Milk Association (THE JOURNAL, Dec. 19, 1931, p. 1890).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 14, 1934

ORGANIZED MEDICINE AND MEDICAL CARE

In some places confusion seems to exist regarding the attitude of organized medicine in relationship to some of the proposals for changes in the nature of medical practice. The confusion has been worse confounded by the precipitate and widely publicized action taken by the American College of Surgeons at a specially called meeting of its Board of Regents in Chicago on June 10, one day before the opening of the annual session of the American Medical Association in Cleveland, at which, as had been announced well in advance, the whole profession of the United States proposed to consider this subject. No doubt, the rebuke administered to the Board of Regents of the American College of Surgeons by the House of Delegates of the American Medical Association was well warranted, and the unanimous approval which greeted the passing of the resolution that the Board of Trustees and the Judicial Council of the Association request an explanation and justification from the Board of Regents was testimony to the manner in which the medical profession in general viewed this action. Even though it may be established that the consideration of this topic by the Board of Regents at such a time was unthinking and unpremeditated, its effect has been such as to give the American medical profession serious concern. Editorials published in newspapers indicate how the propagandists who oppose the policies of organized medicine have taken advantage of this action of the Board of Regents of the American College of Surgeons. THE JOURNAL has called attention repeatedly to the fact that representatives of the Milbank Fund, the Twentieth Century Fund and the Rosenwald Fund have made and are making it their major function to put over a system of social medicine in this country. Mr. E. A. Filene, founder of the Twentieth Century Fund, indicated recently that these three foundations intend to organize particularly to put over their plans. Unless the medical profession speaks with one voice, the possibilities of successful opposition are threatened. Since members of such special societies within organized medicine as the American College of Surgeons and the American College of Physicians, and similar specialistic organizations, are all either members or Fellows of the American Medical Association, the directing councils, bureaus and regents of such bodies should be made to realize by their membership that the majority of physicians of the United States prefer to express their views on economic, political and governmental questions through organized medicine, and that the function of the specialistic societies should be limited to proper consideration of scientific and educational questions.

The considerations that have here been set forth should not lead any one to believe that the American Medical Association, representing 100,000 physicians in the United States, is opposed to all change in the nature of medical practice or to properly controlled experiments in providing medical service that may be set up in any city, county or state. Organized medicine does stand for certain basic principles in any form of medical practice which are fundamental to a maintenance of the high quality of medical care now given to the vast majority of the American people. Even the most radical proponents of change are willing to grant that the standards of medical care in the United States today are higher than those to be found in any other country in the world, regardless of the system of medical care under which it operates.

The House of Delegates of the American Medical Association, following a long executive session, set forth ten principles to guide medical practice and to form the basis for any experiment that may be contemplated. These principles were published in the proceedings of the House of Delegates in THE JOURNAL for June 30, page 2200. It is proposed to discuss these principles individually in further comments in THE JOURNAL from time to time. As was well set forth by the special committee of the House of Delegates which drew up these principles, a reasonable observance will remove many of the disturbing influences from any experiment, particularly as these principles are planned to focus the attention in all medical service on the quality as well as on the costs. These principles were planned to circumvent the interest of politicians, commercial promoters and propagandists whose activities in relationship to new forms of medical practice are not wholly unselfish. The principles are planned to protect the character of the service to be given. They will maintain the personal relationship between physician and patient, which keeps medicine a profession.

On the principles adopted by the House of Delegates the American medical profession must stand, and in their favor it must speak with a united voice. This is no time for the activities of the individual who seeks personal prestige and political preferment as a reward for contributed leadership. In most of the great nations of the world, social medicine has been the panacea proffered by politicians and philanthropists

against social unrest. Let us learn from the experience of those who have tried and who, in many instances, have failed. Let us not be misled by high sounding phrases and insidious diction. Let us beware of generalizations which lead to disaster when the details of their fulfilment become apparent. Let us consider carefully, act with caution, reserve judgment, and speak with one voice for the truth.

CHOLESTEROLEMIA AND THYROID DISORDER

Ever since the development of methods for the more ready estimation of cholesterol in small samples of blood, data have been accumulating in increasing numbers regarding the occurrence of this blood lipoid. The amount present is evidently subject to marked variations even in conditions of health. This is apparently not due to differences in cholesterol intake, for the latter ordinarily has relatively slight influence on the level of blood cholesterol. For some reason it seems to be influenced by the general state of health and nutrition; but until recently even experts in the study of blood were forced to confess that "our knowledge of the factors that determine the level of the various lipoid constituents in the blood in disease is pitifully meager."[1] The values for healthy persons fluctuate between 0.13 and 0.20 per cent. According to Peters and Van Slyke, increase in blood cholesterol, when it occurs in any disease, is more correctly to be associated with some functional disturbance connected with the disease than directly with the malady itself. It is of only secondary significance. High figures for blood cholesterol have long been associated with certain types of kidney disorder, the content sometimes reaching more than 500 mg. per hundred cubic centimeters of plasma. More recently, variations in blood cholesterol have been associated with variations in the activity of the thyroid.

Although there has appeared to be a lack of clear relationship between the basal metabolic rate and the blood cholesterol value (during fasting) in the absence of thyroid disturbance,[2] the observations point to the desirability of more intensive study of the subject. Hurxthal[3] of the Lahey Clinic in Boston has summarized a large experience. It indicates that the blood cholesterol is low in toxic thyroid states and is brought to a normal level partly by preoperative treatment but chiefly by subtotal thyroidectomy. There seems to be a reciprocal relationship between the average elevation of the basal metabolic rate and the average lowering of the blood cholesterol level in toxic goiter, which is further confirmed. In myxedema and other equally well defined cases of hypothyroidism, hypercholesterolemia is a quite constant finding. Accordingly Hurxthal states that hypercholesterolemia, when not explainable on any other basis, may be considered as possibly of thyroid origin and is a rational indication for thyroid administration.

The finding of hypercholesterolemia, in the absence of its few other common causes, points more specifically to thyroid deficiency than does the finding of a low metabolic rate. Finding both renders the possibility of thyroid deficiency extremely likely. The relationship between the blood cholesterol and the basal metabolism is usually reciprocal when they undergo change as the result of variations in the activity of the thyroid gland or thyroid substance in the body. Accordingly it seems warranted to assume that the blood cholesterol provides another variable that may be used as a guide in the treatment of thyroid disease.

1. Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Chemistry, Interpretations, Baltimore, Williams and Wilkins Company, 1931.
2. Grabfield, G. P., and Campbell, A. G.: New England J. Med. **205**: 1148 (Dec. 10) 1931.
3. Hurxthal, L. M.: Blood Cholesterol and Thyroid Disease: II. Arch. Int. Med. **52**: 86 (July) 1933; III. ibid **53**: 763 (May) 1934.

IS CANCER BECOMING MORE PREVALENT?

For a number of years it has been much debated whether or not a real increase has occurred in the incidence of cancer throughout the civilized world. The method employed has been statistical and therefore based as a rule on observations made by a number of different people under different circumstances. The reliability of the conclusions thus deduced depends fundamentally on two components, which are applicable also to any other set of medical or vital statistics—the accuracy and completeness of the original observations and the statistical interpretation and dissociation of modifying factors.

The diagnosis and recording of cancer, especially of the internal organs, have improved markedly in the last few decades but, as every practicing physician and every pathologist knows, the distribution by organs differs according to whether the observations are made by a physician or by a pathologist. Wells[1] noted these points in 1927. The percentage of necropsies is increasing with consequent modification of recorded cancer mortality and correct assignment of distribution. In regard both to accuracy and to completeness of original cancer observations there is a constant change, and comparative statistics based on recorded morbidity and mortality must take this factor into account.

Probably of even greater moment than the changing accuracy and recording of original cancer are the methods of handling the statistics. This fact has not lacked recognition and has been discussed and treated in various ways in numerous articles. Wood,[2] for example, in analyzing the reliability of cancer statistics, says: "An examination of the death certificates of cancer cases showed that on 22 per cent of many hundred certificates the 'duration' of the cause of death

1. Wells, H. G.: Cancer Statistics as They Appear to a Pathologist, J. A. M. A. **88**: 399 (Feb. 5), 476 (Feb. 12) 1934.
2. Wood, H. B.: Reliability of Cancer Statistics, Am. J. Surg. **18**: 31 (Oct.) 1932.

exactly corresponded to the two dates showing the length of treatment. To quote the duration of illness as given on death certificates, therefore, is misleading. There was a preponderating guess that the duration of the disease was one year, or similar designation." He says further: "One of the largest hospitals in the state (Pennsylvania) during six years showed a decrease in lip and tongue cancers, mouth cases showed no change, and the larynx cases doubled; stomach cases quadrupled, rectal cancers increased one half and cervical one sixth. These simply show an experience and do not indicate any trend of cancer development." It is thus possible to testify to the flimsy foundation on which such statistics are often based. At least the error possible should be recognized and allowance made.

The crude death rate, i. e., the deaths from cancer annually per hundred thousand of the total population, does not furnish a sound base for the decision as to fact or degree of cancer increase. Thus, as has been repeatedly pointed out, the age groups from which the statistics are drawn modify the interpretation. A striking example is mentioned by Macklin,[3] who says: "In 1928 Prince Edward Island had a cancer rate of 114, while Saskatchewan had a rate of only 55, or less than half that of the former province. When, however, we consider the age of the population in the two provinces, we see that in the one with the high cancer rate, 31.5 per cent of the inhabitants were over 40 as contrasted with 19.6 per cent in the province with the low cancer rate."

On the other hand the mere variation in or increase of individuals in the upper age groups probably fails to account wholly for the reports of cancer increase. In the group of Metropolitan Life Insurance Company[4] policyholders, for example, even when the 1930 and 1931 cancer death rates are standardized for age, a large increase in the rate was found. "Further," the report states, "no such marked increase in the death rate has been observed in the mortality from cardiac disease, chronic nephritis and cerebral hemorrhage, all of which, like cancer, are diseases of the older ages."

An ingenious, if not perhaps conclusive, method of analysis has been described by Bolduan and Weiner.[5] Their statistics were based on the cancer mortality in New York City, which they divided into "visible cancer," i. e., of the skin, breast, buccal cavity and female genitals, and other forms. When adjusted for age distribution they found practically no change in the death rate from visible cancer in a thirty year period, though the death rate charged to cancer generally showed an upward trend. They believe, therefore, that this evidence seems to "warrant the conclusion that cancer is probably no more prevalent now, in any given age group, than it was a generation ago."

A consideration of some of the factors involved thus shows the difficulty in determining the facts clearly. Training in statistical methods is essential; equally important is a knowledge of the limitations imposed by the source of the material for analysis. No one but the physicians and the pathologists who sign the original statements can fully realize the limits of the latter; when the two qualifications are combined in one individual, the closest approach to the ideal analysis should be reached.

Current Comment

THE STORAGE OF VITAMINS IN THE BODY

The ability of the organism to store a surplus of some of the essentials for its proper functioning is of considerable importance. Much has been said of late about the maintenance of "steady states" in the body; that is, the protection of the latter from untoward reactions by a process of homeostasis, as Cannon of Harvard has designated it. This is the biologic device by which the temperature of the body is kept constant within narrow ranges, the reaction of the blood and other features of its desirable composition are maintained in fairly uniform condition, and still other protective adjustments are accomplished. Physiologists have long been aware of the storage of energy in the form of glycogen in the liver and muscles; likewise of readily available fats in the adipose tissues. Now it is being learned that some of the vitamins are subject to storage. This undoubtedly represents a factor of safety by furnishing a depot of supply in times of dietary shortage. Thus the protection of the body against scurvy may be potentially large or small, depending not only on abundance of vitamin C in the food intake and on its adequate absorption but also on the amount deposited in the tissues. For example, King[1] reported not long ago that in susceptible animals studied by him depletion follows rapidly and regularly with a scorbutic diet. External indications of the depletion appear much later. The distribution of vitamin C in human tissues is analogous to that in guinea-pigs and has been found to show such marked variations for individuals that a wide zone of depletion appears to be fairly common without external evidence of a deficiency. This intermediate zone may be physiologically significant without being recognized by casual examination. Investigations[2] at the University of Wisconsin in Madison show that when vitamin A in the form of halibut liver oil was fed to animals the amount of vitamin A stored in the livers was found to parallel the amount of vitamin A in the diet but that only 10 to 20 per cent of the ingested vitamin A was recovered from this organ. Much of the vitamin was destroyed in the digestive tract, but not all of the losses could be attributed to this destruction. A similar storage of

3. Macklin, Madge T.: Is the Increase of Cancer Real or Apparent? Am. J. Cancer **16**: 1193 (Sept.) 1932.
4. Unprecedented Rise in the Cancer Death Rate, Bull. Am. Soc. for Control of Cancer **14**: 6 (Oct.) 1932.
5. Bolduan, C. F., and Weiner, L.: Is Cancer Becoming More Prevalent? Quart. Bull. City of New York, Dept. of Health **2**: 1, 1934.

1. King, C. G.: The Vitamin C Content of Human and Guinea-Pig Tissue, J. Nutrition **7**: 13 (May, abst.) 1934.
2. Baumann, C. A.; Rising, B. M., and Steenbock, Harry: The Absorption and Storage of Vitamin A by the Rat, J. Nutrition **7**: 13 (May, abst.) 1934.

vitamin A has been described, among others, by McCoord and Luce-Clausen[3] of the University of Rochester, N. Y. The concentration of vitamin A in the blood is no indication of the amount that may be stored in the liver. The Rochester nutritionists venture to speculate as to the reason for this striking capacity of the liver to store vitamin A. One thinks at once of a storage to combat infection, but their results lend no support to the theory of the anti-infective value of vitamin A when supplied to animals in adult life. It should not be inferred from the foregoing that all the known vitamins are stored with equal readiness, for this is surely not the case. The important point is that it is probably advantageous to keep the reserve depots, for some of the vitamins at least, well filled with these valued requisites for perfect health and well being.

CREATINE AND THE CARDIAC MUSCLES

Creatine is a constant component of the striped muscle tissue of all vertebrates and it occurs to some extent in other tissues. As most of the creatine in the body is present in the muscles, the content approximating an average of 0.4 per cent, there is a suggestion at least that creatine is concerned in some way with the function of the contractile tissue. This has been further emphasized through the discovery of phosphocreatine in muscle and the growing evidence that this interesting compound plays some vital part in muscular contraction. In view of these considerations it is significant that the concentrations of creatine of the left and right ventricular muscles of the heart are different, the former having the greater concentration. This has been established recently at the Western Reserve University by Seecof, Linegar and Myers.[1] These investigators emphasize that, in addition to embryologic, anatomic, physiologic and pathologic observations, chemical evidence is now presented pointing to the fact that the left and right ventricles are different muscles. The magnitude of the differences under discussion amounts to 30 per cent in favor of the left heart. It applies to human and animal hearts alike. The two ventricles differ not only in creatine content but also in respect to other components. Differences in glycogen, lipids, phosphoric acid, inorganic salts, potassium and calcium have been recorded. Wearn[2] showed variations in the number of capillaries of different portions of the heart in man and in animals. There are electrocardiographic differences between the ventricles, which may again indicate qualitative differences between the left and the right ventricle. The Cleveland investigators remark that there are probably other differences with which we are not acquainted. They also point out that the realization that the left and right ventricles (as well as other portions) of the heart are chemically different may have some value in pharmacologic and therapeutic measures as applied to the heart. Seecof, Linegar and Myers conclude that the concept that the two ventricles are different offers a working theory, which may reconcile, in a manner better than has been possible heretofore, the functional activities with the structure and the chemical constitution of the heart. As such its value remains to be proved or disproved.

3. McCoord, Augusta B., and Luce-Clausen, Ethel M.: The Storage of Vitamin A in the Liver of the Rat, J. Nutrition **7**: 557 (May) 1934.

1. Seecof, D. P.; Linegar, C. R., and Myers, V. C.: The Difference in Creatine Concentration of the Left and Right Ventricular Cardiac Muscles, Arch. Int. Med. **53**: 574 (April) 1934.

2. Wearn, J. T.: The Extent of the Capillary Bed of the Heart, J. Exper. Med. **47**: 273 (Feb.) 1928.

Association News

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, Central daylight saving time. The speaker will be Dr. W. W. Bauer. The next three broadcasts will be as follows:

July 19. Entertaining the Convalescent Child.
July 26. The First Month.
August 2. Dog Days.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Resolution on School Clinics.—The Ouachita County Medical Society, Camden, recognizing that adequate examinations of school children cannot be conducted in large groups, recently adopted a resolution announcing its future policy. School children will be supplied with the necessary forms and referred to their family physicians for examination. Only those able to pay will be charged. This policy will also affect persons wishing to be immunized against typhoid, diphtheria and smallpox. Those who are not able to pay will be immunized, but the vaccine, virus or toxin-antitoxin will be furnished by the health department as at present.

CALIFORNIA

The Epidemic of Poliomyelitis.—A total of 1,223 cases of poliomyelitis have occurred throughout California since May 1, the New York *Times* reported, July 1. San Francisco has had sixty-nine cases of paralysis since May 1, with six deaths; Alameda County, 113 cases with eight deaths during the same period, while, on June 25, 325 patients were being treated in the Los Angeles General Hospital and 155 were under observation. Dr. James P. Leake of the U. S. Public Health Service is in California to cooperate with health officials in combating the disease.

Plague in Ground Squirrels.—Although no case has been reported among human beings, a recent noticeable increase in the ground squirrel population led the state board of health to make a survey of bubonic plague. The work has been concentrated in the rural sections of Kern, Tulare, Monterey and San Luis Obispo counties. Twenty-one cities and towns were visited; 162 ranches were visited and squirrels were hunted on 143. There were 3,185 squirrels shot, 34 of which were found positive for plague; of the 2,400 squirrels found dead, 106 proved positive. There were 5,304 postmortem examinations made on rodents, and twenty-four plague foci were located. Plague was not evidenced in any of the rats examined.

Society News.—At a meeting of the Alameda County Medical Association, June 18, Drs. Mark L. Emerson, Frank H. Bowles and Archie A. Alexander discussed "The Use of Histamine as an Indicator of Cutaneous Circulation in Leg Amputations," and Drs. Robert A. Glenn and Vernon G. Alderson, amebiasis. All are from Oakland.——Dr. James W. Sherrill, San Diego, spoke on "Relation of the Glands of Internal Secretion (Other than the Pancreas) to Carbohydrate Metabolism" before the Hollywood Academy of Medicine, June 21.——Speakers before a joint meeting of the Solano and Contra Costa county medical societies in Vallejo, June

12, were Drs. William C. Voorsanger, San Francisco, and Fred R. Fairchild, Woodland, on tuberculosis in children and appendicitis, respectively.——The cornerstone of the library of the Los Angeles County Medical Association was laid, June 21, by Dr. Walter Jarvis Barlow. It is expected that the new building will be ready for occupancy about September 1.——Clarence Cook Little, Sc.D., Bar Harbor, Maine, discussed "The Rôle of Heredity in Cancer" before the San Francisco County Medical Society, July 7.

GEORGIA

Program for Health Chairmen.—Members of the Fulton County Medical Society presented a program in April for health chairmen of elementary and preschool associations of the Atlanta Council of Parents and Teachers, the DeKalb and Fulton County councils, under the auspices of the woman's auxiliary of the state medical association. The following physicians participated:

Lawson Thornton, Posture: Defects and Correction.
Launcelot Minor Blackford, The Heart: Damages Through Disease; Avoidance.
Lewis D. Hoppe Jr., Control of Communicable Diseases in the Home and School.
William Howard Hailey, Common Skin Diseases of Children.
Zachariah W. Jackson, Sight Conservation.

IDAHO

Society News.—Drs. John F. Coughlin, Twin Falls, and James O. Cromwell, Gooding, addressed the South Side Medical Society at Jerome, May 28, on "Staphylococcic Skin Infections" and "Infections of the Foot," respectively.——The Nez Perce County Medical Society and the Tri-County Medical Society have recently combined to form the North Idaho District Medical Society, with Drs. Russell T. Scott and Malcolm J. McRae, Lewiston, as president and secretary, respectively.

ILLINOIS

Automobile Deaths Increase.—There were 2,177 deaths from automobile accidents in Illinois during 1933 as compared with 2,104 in 1932, giving a rate of 28.5 for the state as a whole as against 27.5 per hundred thousand of population in 1932. The rate for the state exclusive of Chicago was 28.8, and for Chicago, alone, 28. According to the Chicago *Tribune*, at a recent meeting of the Illinois Conference on Highway Safety Legislation, which is sponsoring drivers' license and financial responsibility laws to reduce accidents, J. S. Baker, engineer for the National Safety Council, estimated that accidents of all descriptions have increased about 50 per cent in the first few months of this year as compared with the corresponding period of 1933. He also declared that the number of accidents is growing faster in rural than in urban areas.

Chicago

Dr. Lederer Named Head of Department.—Dr. Francis L. Lederer, who has been associate professor and acting head of the department of rhinology, laryngology and otology, University of Illinois College of Medicine, has been appointed professor and head of the department to succeed Dr. Norval H. Pierce, who is now professor emeritus.

Joseph A. Capps Prize.—The Institute of Medicine of Chicago is again offering the Joseph A. Capps Prize of $500 to graduates of Chicago medical schools who have received the degree of doctor of medicine during the year 1932 or thereafter. The prize will be awarded for the most meritorious investigation in medicine or in the specialties. Investigation in the fundamental sciences will be considered also, provided the work has a definite bearing on some medical problem. Manuscripts must be submitted to the secretary of the Institute of Medicine of Chicago, 122 South Michigan Avenue, not later than December 31.

Typhoid Outbreak Among Firemen.—Physicians are asked to be on the alert for patients with symptoms suggestive of typhoid and amebiasis which might result from water consumed at the fire in the Union Stock Yards, May 19. On June 25, thirty-three persons ill with typhoid had been reported to the city board of health. It was pointed out that these persons drank from cattle troughs and almost any place they found water available. The city water supply was and is safe, and only certain persons of those who drank contaminated water became infected. Eighteen suspected typhoid cases were being investigated at the time of this report; most of these persons also drank water at the stockyards. Following the fire, eight of the thirty-three patients were ill with diarrhea, cramps, nausea and fever for a day or two and recovered. Later, however, they became ill with typhoid. Definite onset dates of these thirty-three cases range from June 1 to June 16. Physicians are urged to avail themselves of the facilities of the laboratory of the health department when they encounter a case they suspect of being either amebiasis or typhoid.

KANSAS

Brinkley Thrice Runs for Governor.—Dr. John R. Brinkley, the so-called "goat gland" specialist, announced his candidacy for the Republican nomination for governor of Kansas, the Chicago *Tribune* reported, June 21. Brinkley has been an unsuccessful independent gubernatorial candidate on two previous occasions. His license to practice medicine in Kansas was revoked in 1930, when he was found guilty of gross immorality and unprofessional conduct.

MARYLAND

Society News.—Dr. Arthur M. Shipley, Baltimore, addressed the Caroline County Medical Society at Denton, May 16, on "Surgery of the Blood Vessels."——The Baltimore County Medical Association was addressed in Baltimore, June 20, by Drs. Harry M. Stein on "Lung Abscess of Unusual Origin," with exhibition of case, and George H. Yeager, "Passive Vascular Exercises," with exhibition of cases.

Examination of Substandard Workers.—Physical examinations of substandard workers in specified industries have been made by deputy state health officers in a number of counties in Maryland, recently, at the request of the state commissioner of labor and statistics, with the approval of the state board of health. Required under the National Recovery Administration, the examinations are to determine the extent to which physical handicaps or infirmities constitute a disability for the particular job on which a worker is engaged. Following these examinations, persons who are physically handicapped may be certified for employment, the wage rate to be adjusted in accordance with the extent of the disability.

Rocky Mountain Spotted Fever in Maryland.—Thirteen cases of Rocky Mountain spotted fever have been reported to the bureau of communicable diseases of the Maryland State Department of Health since the middle of April, according to the *Monthly Bulletin* for July. Two occurred in Baltimore City, three in Anne Arundel County, four in Baltimore County, and one each in Montgomery, Prince Georges, Talbot and Worcester counties. Three cases were fatal, one each in Anne Arundel, Baltimore and Montgomery counties. Two victims were children under 6 years of age and the third was a woman 24 years old. All of the patients were exposed to ticks. The child who died from the disease in Anne Arundel County had not been bitten but had crushed a tick in his hands. Preventive measures during the past year have included the inoculation of 130 children in the Somerset area of Montgomery County.

MASSACHUSETTS

Harvard Bans Patents.—Harvard University faculty members have voted that the patenting of discoveries or inventions bearing on matters of health and therapeutics is undesirable. As a result, Harvard scientists will not be permitted to take out such patents, unless granted dispensations by the university, newspapers report.

Dr. Overholser Appointed Commissioner.—Dr. Winfred Overholser, assistant professor of psychiatry at Boston University School of Medicine and assistant commissioner in the state department of mental diseases, has been appointed commissioner of mental diseases, succeeding Dr. James V. May, who resigned to return to his former position as superintendent of Boston State Hospital, which he had held from Dec. 1, 1917, until 1933. Dr. Overholser is 42 years of age and a graduate of Boston University School of Medicine. Dr. Joseph E. Barrett, Taunton, has been appointed assistant commissioner to succeed Dr. Overholser. He has been associated with the department for more than six years.

MICHIGAN

Koch Cancer Outfit Sued.—A verdict for $25,000 was returned by a jury in recorder's court before Judge Sherman D. Callender, June 12, in the suit of Alfred A. Fortner against Dr. William F. Koch, director of the Koch Cancer Foundation, Detroit. According to the *Detroit Medical News*, Fortner alleged that Dr. Koch charged him $300 each for injections of the cancer serum, when he was not suffering from cancer. In 1921 Koch was dropped from the membership of the Wayne County Medical Society for exploiting a "cancer cure," the claims for which have never been substantiated. In the recent trial, Fortner said he went to Koch believing he had

cancer and was treated with the serum from June to September in 1931, after which Koch advised him to discontinue the treatment and go to a hospital. Fortner then discovered he had another disease. The complaint charged Dr. Koch with negligence in that he failed to inspect the infected tissue to determine the cause of trouble, that he injected a poisonous drug in the man's blood stream, and that he abandoned his patient without cause. Koch did not appear in court to testify. The attorney for Koch said he will appeal the case.

NEW MEXICO

State Medical Meeting at Las Vegas.—The fifty-second annual meeting of the New Mexico Medical Society will be held in Las Vegas, July 19-21, under the presidency of Dr. Charles F. Milligan, Clayton. Among guest speakers will be:

Dr. Franklin D. Garrett, El Paso, Texas, Anaphylaxis—An Important Cause of Obscure Abdominal Pain and Digestive Disturbances.
Dr. Casper F. Hegner, Denver, Surgery of the Abdomen.
Dr. James A. Britton, Chicago, Silicosis.
Dr. James W. Kennedy, Philadelphia, Indications for Vaginal Hysterectomy.
Dr. Louis A. Buie, Rochester, Minn., Hemorrhoids.
Dr. Charles W. Mayo, Rochester, Appendicitis.
Dr. Hugo O. Deuss, Chicago, Blood Dyscrasias—Agranulocytosis and Acute Leukemia.
Dr. Onis H. Horrall, Chicago, Trauma of the Joints and Cartilaginous Repair.

NEW YORK

Personal.—Drs. Horace Lo Grasso, Joseph P. Gimbrone and Anthony J. Cetola, Buffalo, were guests of honor at a dinner given by the Baccelli Medical Club at the Hotel Statler, Buffalo, June 19, marking their completion of twenty-five years of medical service.——The Medical Society of Montgomery County gave a dinner, June 19, at Canajoharie, in honor of Dr. Frank V. Brownell, Canajoharie, who has completed fifty years of medical practice.

Dr. Wright to Head Department.—Dr. Arthur W. Wright, for the past four years director of a laboratory of pathology, has been appointed professor and head of the department of pathology at Albany Medical College to succeed Dr. Victor C. Jacobson, who resigned. Other resignations announced are those of Drs. Henrietta C. Horner, associate professor of neuropathology, and Ada Hazel Curry, Troy, assistant professor of bacteriology.

Society News.—Drs. Edgar A. Vander Veer and James S. Lyons, among others, addressed the Medical Society of the County of Albany, June 27, on "Cysts of the Gallbladder and Bile Ducts" and "Anomalies of the Urinary System," respectively. Dr. Stanley E. Alderson spoke, May 23, on "Acute Intestinal Obstruction."——Dr. James E. King, Buffalo, was elected president of the Medical Alumni Association of the University of Buffalo at the annual meeting, June 12.——Dr. Howard F. Rowley gave his presidential address at a meeting of the Rochester Pediatric Society, June 1, on "Observations on the Thymus Gland."——Dr. William G. Turner, Montreal, among others, addressed the Franklin County Medical Society at its semiannual meeting in Saranac Lake, June 13, on "Surgical Problems in Correcting Deformities."

New York City

Personal.—Dr. Thomas A. McGoldrick was appointed chief surgeon of the police department, June 12. He has been associated with the police department for twenty-five years and is also assistant professor of medicine at Long Island College of Medicine and chief surgeon at St. Peter's Hospital, Brooklyn.——Associates of Dr. Frederick C. Holden, professor of obstetrics and gynecology, University and Bellevue Hospital Medical College, gave a dinner in his honor at Sherry's, June 1, on the occasion of his retirement from active duty at the medical school and hospital. On behalf of his colleagues, Dr. Edwin W. Holladay presented to Dr. Holden a silver bowl. Speakers were Drs. Edward A. Schumann, Philadelphia, Robert L. Dickinson and Joseph Brettauer.——Dr. Edward Cathcart, Detroit, has been appointed associate dean of Columbia University College of Physicians and Surgeons, to succeed Dr. Frederick T. van Beuren Jr., who resigned. Dr. Cathcart, a graduate of the University of Michigan Medical School, Ann Arbor, was until recently at the Mayo Clinic, Rochester, Minn.——Dr. Menas S. Gregory has resigned as director of the psychopathic division of the department of hospitals. Dr. Carter N. Colbert has been appointed acting head of the psychiatric staff at Bellevue Hospital to serve until civil service examinations are held for the position.——Dr. David Sackin has recently been promoted to associate professor of otolaryngology at New York Homeopathic Medical College.

OHIO

Dr. Friedlander Appointed Dean at Cincinnati.—Dr. Alfred Friedlander, professor of medicine, University of Cincinnati College of Medicine, was appointed dean of the college in June, to succeed Dr. Arthur C. Bachmeyer, resigned. He will assume office, September 15. Dr. Friedlander is a native of Cincinnati and was graduated in medicine from the university in 1895. He was associate professor of pediatrics in the college of medicine from 1910 to 1917 and has been professor of medicine since 1919.

Grants for Research.—Grants totaling $8,500 annually for two years have been made to Western Reserve University School of Medicine, Cleveland, for extension of research in experimental pathology, it was announced at the commencement, June 13. Of the total amount, $3,000 annually will be contributed by Nathan G. and Charles L. Richman, Cleveland; $500 annually by Richard H. Kohn, Cleveland, and $5,000 from a trust fund established by Commodore Louis D. Beaumont, a former resident of Cleveland. Dr. Harry Goldblatt, associate professor of pathology and assistant director of the Institute of Pathology, will have charge of the work to be done under the grants, relating especially to hypertension and peritonitis.

PENNSYLVANIA

Survey of Diphtheria Immunization.—The Pittsburgh department of health in an investigation of diphtheria immunization recently found that, of 40,044 children investigated in 27,491 families, 7,679 had been immunized. Of the number of immunizations, 67.9 per cent had been done by public health agencies and 32.1 per cent by private physicians.

Seminars at Sayre.—A series of six graduate seminars is being presented at Robert Packer Hospital, Sayre, under the auspices of the medical societies of Bradford, Sullivan, Susquehanna, Tioga and Wyoming counties. During June speakers were Drs. Edward J. G. Beardsley, on cardiovascular renal disease; Edward L. Bauer, diseases of children; Catharine MacFarlane, gynecologic conditions, and Vaughn C. Garner, dermatologic subjects. All are from Philadelphia.

Philadelphia

Hospital News.—The Fridenberg Memorial Surgical Building of the Jewish Hospital was dedicated June 24. Judge Harry S. McDevitt delivered the principal address. The building was erected at a cost of $400,000 from a legacy left by the late Mone Samuel Fridenberg. It is five stories high and will accommodate 100 ward patients with no provisions for private or semiprivate patients.

Memorial to Dr. Knowles Proposed.—The Philadelphia County Medical Society is sponsoring a memorial fund to the late Dr. George A. Knowles, former assistant director of health of Philadelphia. Part of the fund will be used to have a bust made of Dr. Knowles, to be mounted in the society's headquarters, and the remainder to create an endowment fund in the aid association of the society.

Personal.—The University of Pennsylvania conferred the honorary degree of doctor of science on Dr. William Gibson Spiller, emeritus professor of neurology in the school of medicine.——The honorary degree of doctor of science was conferred on Dr. Robert F. Ridpath, professor of rhinolaryngology, Temple University School of Medicine, by Ursinus College, Collegeville, June 11.——Dr. Horatio C. Wood Jr. received the honorary degree of master of science at the annual commencement of the Philadelphia College of Pharmacy and Science.——Dr. Walter G. Elmer has been advanced to professor of orthopedics at the Woman's Medical College of Pennsylvania.

TENNESSEE

University News.—Dr. Marcus Pinson Neal, Columbia, Mo., is visiting professor of pathology and bacteriology at the University of Tennessee School of Medicine, Memphis, during the summer quarter in the absence of Dr. Harry C. Schmeisser.——The annual Alpha Omega Alpha Lecture at Vanderbilt University School of Medicine was delivered, April 30, by Dr. Samuel C. Harvey, New Haven, Conn., on "Tumors of the Nervous System Derived from the Neural Crest."

Health at Memphis.—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million indicate that the highest mortality rate (19.4) appears for Memphis and the rate for the group of cities as a whole was 10.8. The mortality rate for Memphis for the corresponding week of 1933 was 13.4 and for the group of cities, 10.2. The annual rate for eighty-six cities for the twenty-six weeks of 1934 was 12.1, as against a rate

of 11.5 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for wide areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

UTAH

State Medical Election.—At the fortieth annual session of the Utah State Medical Association, held in conjunction with the thirteenth annual meeting of the Pacific Northwest Medical Association at Salt Lake City, June 21-23, officers were chosen as follows: Drs. William R. Tyndale, Salt Lake City, president-elect; Menzies J. MacFarlane, Cedar City, and Farley G. Eskelson, Vernal, vice presidents; and George N. Curtis, secretary. Dr. John Driver, Ogden, was made honorary president, the first physician to have this distinction; he is 85 years old. The next annual session will be held in Logan.

VIRGINIA

Dr. Riggin Appointed State Health Officer.—Dr. Warren F. Draper, assistant surgeon general of the U. S. Public Health Service, who has served as health officer of Virginia for the past three years, has resigned and will be succeeded by Dr. Irl C. Riggin, director of rural health work. Dr. Riggin, a graduate of Johns Hopkins University School of Medicine, Baltimore, was state epidemiologist for Virginia in 1925 and also served as health commissioner of Lorain County. Later he was executive director of the American Heart Association for several years, returning to Virginia as director of rural health work in July 1932. Dr. Draper, who has been on leave of absence, will return to the federal health service.

WASHINGTON

Personal.—Dr. Edward C. Ruge has resigned as superintendent of the Northern State Hospital at Sedro-Woolley.——Dr. Howard L. Hull, superintendent and medical director of Oakhurst Sanatorium, Elma, since 1923, has resigned to enter private practice in Yakima. Dr. Leslie P. Anderson, White Haven, Pa., will succeed him.——Dr. Max Cutler, Chicago, addressed the King County Medical Society, June 29, on pathology and treatment of neoplastic diseases.

WEST VIRGINIA

Society News.—Drs. Russell B. Bailey, Wheeling, and Earl Bannette Henson, Charleston, addressed the Raleigh County Medical Society, Beckley, June 7, on "Lesions of the Lungs and Mediastinum" and "Treatment of the Tuberculous Bone Lesion," respectively.——Drs. Oscar H. Fulcher and Harry T. Schiefelbein, Welch, addressed the Mercer County Medical Society in a joint meeting with the McDowell County Medical Society at Bluefield, June 21, on "Presacral Sympathectomy for Bladder Conditions" and "Crossed Eyes," respectively.——Dr. Richard B. Easley, Huntington, presented a paper on "Cisterna Magna Puncture: Its Technic and Use" before the Cabell County Medical Society, June 14.——A symposium on heart disease was presented at a meeting of the Kanawha Medical Society, June 19, by Drs. George H. Barksdale and Pat A. Tuckwiller, Charleston.——Drs. Martin L. Bonar, Charleston, and Clint W. Stallard, Montgomery, addressed the Fayette County Medical Society, Oak Hill, June 12, on "The Eczemas" and "Diagnosis of Sacro-Iliac Relaxation with Operative Treatment," respectively.—Dr. William C. D. McCuskey, Wheeling, spoke on transurethral resection of the prostate at the final meeting of the Lewis County Medical Society for this season at Weston, June 7.

WYOMING

State Medical Meeting at Casper.—The thirty-first annual meeting of the Wyoming State Medical Society will be held in Casper, July 16-17, at the Elks Club, under the presidency of Dr. Frederick L. Beck, Cheyenne. Guest speakers will include:

Dr. Adolph Sachs, Omaha, Modern Cardiac Therapy.
Dr. John Jay Keegan, Omaha, Emergency Brain Surgery.
Dr. Douglas W. Macomber, Denver, Early Diagnosis of Ectopic Pregnancy.
Gordon E. Davis, U. S. Public Health Service, Hamilton, Mont., Colorado Tick Fever.

Wyoming physicians who will participate include:

Dr. Paul S. Read, Worland, Medical Economics.
Dr. Hugo L. Lucic, Cheyenne, Common Causes of Blindness.
Dr. Edwin Earl Whedon, Sheridan, The Spencer-Parker Vaccine and Its Use in Sheridan County.

The Natrona County Medical Society will entertain with a smoker Sunday evening, July 15, at the Gladstone Hotel, and a golf tournament will be begun Monday morning and finished Tuesday. There will be clinics at the county hospital Monday and Tuesday mornings and Dr. Nolie Mumey, Denver, will have a special exhibit of wax models of pathologic specimens.

GENERAL

Otolaryngology Examinations.—Sixty-two candidates were examined by the American Board of Otolaryngology in Cleveland, June 11; fourteen were conditioned or failed. Examinations will be held during the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago, September 8, and at the meeting of the Southern Medical Association in San Antonio, Texas, November 16. Prospective applicants for certificates should address the secretary, Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, for application blanks.

School Physicians' Meeting.—Dr. Charles H. Keene, Buffalo, was elected president of the American Association of School Physicians at its annual meeting at Saratoga Springs, June 27. Drs. John Sundwall, Ann Arbor, Mich., James F. Rogers, Washington, D. C., Charles C. Wilson, Evansville, Ind., and Haven Emerson, New York, were elected vice presidents and Dr. William A. Howe, New York State Department of Education, Albany, was named secretary. Among speakers on the program were the following:

Dr. William H. Park, New York, Immunization.
Dr. Edward Francis, Washington, D. C., Diagnosis of Undulant Fever.
Dr. Esmond R. Long, Philadelphia, Tuberculin: Proposal of a Standard Substance for Uniformity in Diagnosis and Epidemiology.
Dr. Simon Flexner, New York, Two Decades of Medical Research.
Dr. Hugh S. Cumming, Washington, D. C., Public Health in the United States.
Clarence C. Little, Sc.D., Bar Harbor, Maine, Public Health Aspects of the Cancer Problem.
Dr. Henry D. Chadwick, Newton, Mass., School Health Service in Massachusetts.

Society News.—Dr. Thomas F. Abercrombie, Atlanta, Ga., was elected president and Dr. Alphonse Lessard, Quebec, Canada, vice president of the Conference of State and Provincial Health Authorities of North America at the annual meeting in Washington, D. C., June 6. Dr. Albert J. Chesley, St. Paul, was reelected secretary. The conference adopted a resolution expressing the opinion that a health officer or any physician connected with a health department should not allow his name or influence to be used in promoting the sale of any drug, remedy or proprietary food product.——The western section of the American Congress of Physical Therapy, the Pacific Physical Therapy Association and the Los Angeles County Medical Association sponsored a postgraduate seminar on physical therapy at the Mayfair Hotel, Los Angeles, June 21, in which guest speakers were Drs. Disraeli W. Kobak, Chicago, on "Electrophysiology," "Present Status of Ultraviolet Therapy" and "Evaluation and Technic of Various Methods of Producing Artificial Fever," and Bernard L. Wyatt, Tucson, Ariz., "Newer Aspects in Treatment of Arthritis."——The thirteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held in Philadelphia, September 10-13.

FOREIGN

Madame Curie Dies.—Mme. Marie Sklodowska Curie, co-discoverer with her husband of radium, died of pernicious anemia at a sanatorium near Sallanches, France, July 4, aged 66. It was said that her long exposure to radiation probably hastened her death. Madame Curie was born in Warsaw, Poland, Nov. 7, 1867, and received her early scientific training under her father. After taking a degree in science at the University of Paris, she was married in 1895 to Prof. Pierre Curie. They began research on radioactivity in 1896 immediately after the property had been discovered in uranium by Becquerel. In 1898 they isolated radium from pitchblende. The Royal Society of England awarded the Curies the Davy medal in 1903, and the same year the Nobel prize in physics was awarded to them jointly with Becquerel. The French Academy of Sciences had previously honored them with the La Caze prize of 10,000 francs. In 1906 Professor Curie was killed in an accident and Madame Curie succeeded him as professor of physics at the university, the first woman to hold such a position there. In 1911 she received the Nobel prize in chemistry in recognition of her research. The University of Paris later created the Radium Institute and placed Madame Curie at the head of the research department, known as the Curie Laboratory, which she directed actively until a few weeks before her death. During the World War, Madame Curie

organized a radiologic service for treatment of wounded at the front. The distinguished scientist twice visited the United States. In 1921 she came to receive a gram of radium, valued at $100,000, presented to her by President Harding on behalf of American citizens; in 1929 she returned to accept a check for $50,000, presented for her friends by President Hoover in a ceremony at the National Academy of Sciences. The latter fund she gave to her native city of Warsaw for promotion of research on radium. In 1922 the Academy of Medicine in Paris elected her a member and the following year the French government voted her a pension of 40,000 francs a year. It was said that she lived humbly in Paris, using her income for the rental of radium. Among honors conferred on Madame Curie in recent years were the Cameron Prize of the University of Edinburgh, a gold medal conferred by the International Congress of Radiology at its Paris meeting, an honorary membership in the Sociedad Española de Física y Química, all in 1931.

Government Services

Trade Commission Charges Misrepresentation in Bayer Aspirin Advertising

The Federal Trade Commission has filed a complaint charging misrepresentation in connection with the sale of acetylsalicylic acid tablets against the Bayer Company, Inc., New York. The commission alleges that the company's advertising tends to mislead buyers into believing that "Bayer aspirin" is the only genuine acetylsalicylic acid, intimating that the product sold by its competitors is not "aspirin," is not as beneficial as the Bayer product, and is counterfeit or spurious. According to the complaint, Bayer advertising has proclaimed that its tablets will quickly relieve any and every pain and that any user may safely take as many tablets as necessary to relieve pain or to cure disease or sleeplessness. Relying on medical opinion, the commission stated that there are persons who cannot take such tablets safely even in small or moderate doses, others who cannot take more than the usual or prescribed dose and others to whom excessive use would be dangerous and even fatal. The commission pointed out that at most acetylsalicylic acid may be used to relieve pain resulting from the ailments mentioned in the company's advertising, but it is not adequate treatment for the underlying pathologic condition and will not relieve, check, remove or cure it. The commission recounts the fact that acetylsalicylic acid was first imported into the United States from Germany in 1899, when the name "aspirin" was registered as a trademark. A United States patent was obtained in 1900 and the product was first sold in powdered form to druggists, physicians and manufacturing chemists but to the public only on prescription. About 1904 the German company authorized chemists to prepare it in tablet form, but, according to the commission's complaint, "in no case did the name of the respondent or its predecessor appear upon the containers." The chemists sold it under their own names, it was said. Bayer first sold the tablets to the public in 1915, but in 1917 the patent expired and the right to use the name "aspirin" became free to all. In 1918 the patent office canceled the trademark registered in 1899.

Examinations for Appointment to Army Medical Corps

The War Department announces that examinations will be held September 24-28 for candidates who wish to qualify for appointment in the U. S. Army Medical Corps. General requirements for eligibility for appointment are that the candidate must be a male citizen of the United States between the ages of 23 and 32, must be a graduate of an acceptable medical school, must have a commission in the Medical Reserve Corps, and must be physically fit. Candidates must also have had at least one year's hospital training subsequent to the completion of four years' instruction in a medical school or its equivalent in professional experience. The Medical Department has experienced an unusually large number of separations from the service during the past few months and the list of qualified candidates on the examinations held in March has been exhausted. Appointees from the forthcoming examinations will be ordered to the Medical Field Service School, Carlisle Barracks, Pa., for the basic course of instruction, Jan. 1, 1935. Applications for authority to take the examination should be forwarded to the Adjutant General, War Department, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 16, 1934.

Voluntary and Municipal Hospitals

The great development in recent years of municipal (tax-supported) hospitals has been described previously. At a conference of voluntary hospitals in London, Sir George Newman, chief medical officer of the Ministry of Health, read a paper on Cooperation Between Voluntary and Municipal Hospitals. Referring to hospital accommodation in England and Wales, he said that there were about 1,850 hospitals with 215,000 beds consisting of 860 municipal hospitals with 143,000 beds provided by local authorities and about 1,000 voluntary hospitals with 72,000 beds. These totals included 130 hospitals and sanatoriums for tuberculosis provided by local authorities and 135 voluntary hospitals with 9,000 beds for tuberculosis. In addition to these totals the local authorities provided 172 hospitals with 139,000 beds for lunacy and mental deficiency and 1,310 hospitals with 194,000 beds for infectious diseases. Would it be wise to put all hospitals on a municipal basis of rates and taxes and allow the voluntary hospitals to disappear or would it be better to combine the two into one cooperative system? He strongly favored the latter. It would be more economical in the long run. There was now a legal obligation on the local authorities for cooperation with the voluntary hospitals, but in some areas this was not effective. Further organization was necessary for this purpose. Health officers reported that the desire for cooperation was widespread but that there was some indication of fear on the part of the representatives of voluntary hospitals that local authorities intended to compete unduly with these. A cooperative system of hospitals was likely, if properly organized, to be more economical in the long run than a tax-aided state system without the voluntary element, and it provided for their peculiar English genius for practical compromise between collectivism and individualism. It was satisfactory that forty-six county councils and sixty-eight county boroughs had already provided the means of mutual cooperation. In the discussion that followed, Lord Riddell pointed out that the London Voluntary Hospitals Committee had done a great deal of useful work and established friendly relations with the county council, which controls the vast municipal hospital system of London.

The Prevention of Accidents in Mines

In the house of commons the labor party tried to blame the government for accidents in mines. Between 1928 and 1932 there were 277 fire-damp explosions, causing the deaths of 315 men and injuring 538. It was asserted that these explosions were due to imperfect ventilation and violation of the regulations. The mines act provides that miners should be withdrawn when more than 2.5 per cent of gas is present, but a labor member alleged that he had worked for hundreds of hours in the pit with 5 per cent of gas. Mr. Brown, secretary of the mines department, replied that there was no infallible cure for explosions in mines. The deaths over the last sixty years showed a large and progressive reduction. In the decade 1873-1882 the annual average was 65 per hundred thousand employed, but in the decade 1923-1932 only 6. In the latter decade the average number of persons killed annually by explosions was 52 and the average killed underground from all causes was 933. The deaths from explosions were thus 5.5 per cent of the total deaths underground. In regard to nonfatal accidents the annual average from explosions was 100, of which some were slight, and from all causes underground, 150,000. In the last hundred years no subject had received greater care and

thought or had more research done on it or had received more attention at the hands of those responsible for administering the law than the question of explosions. A big reduction in the number of deaths had taken place, mainly from the application of stone dust in the mines. He could not agree with the statement that if there was enough ventilation there would be no explosions. In the opinion of his advisers there were times and circumstances when it was impossible to prevent an accumulation of gas. In a period of ten years there had been 132 deaths and 154 injuries from shots fired. The number of explosions causing injuries, however slight, was forty-seven; but the number of shots fired in mines where there could have been explosions was some 300,000,000. Research work had resulted in many improvements to reduce the number of accidents. Some explosions occurred from natural causes, others from lack of proper ventilation or from bad distribution of air. There was always the problem of human fallibility. In that connection he might point out that between 1924 and 1933 there had been forty-seven deaths and fifty-nine cases of injury due directly to smoking and the presence of matches in mines. A labor member refused to accept these figures, but Mr. Brown felt bound to accept them, as they came from his advisers. He also insisted that the inspection of mines was adequate. The Safety in Mines Research Board was working actively not only in carrying out research but in preparing technical papers for technicians. Attention was being given to protective equipment to avoid the large number of accidents to hands, eyes, feet and heads, and experiments were being made with special types of gloves, goggles, boots and hats. A motion for the reduction of the vote for $1,000,000 for the salaries and expenses of the Mines Department (the usual mode of censure) was rejected.

Conditions Under Which Advice on Birth Control May Be Given at Public Clinics

The question of giving advice on birth control at clinics provided under the public health acts has given rise to controversy. Three years ago the Ministry of Health issued a memorandum stating that certain clinics "will be available only for women who are in need of medical advice and treatment for gynecological conditions, and that advice on contraceptive methods will be given only to married women who attend the clinics for such medical advice or treatment, and in whose case pregnancy would be detrimental to health." In 1932 the departmental committee on maternal mortality and morbidity published its final report, in which it emphasized the importance of the avoidance of pregnancy by women suffering from organic disease, such as tuberculosis, heart disease, diabetes and chronic nephritis, in which child bearing is likely seriously to endanger life. The committee considered that advice on contraceptive methods should be readily available for such women. The Ministry of Health has now issued a circular to the effect that this advice shall be available to married women suffering from sickness, physical or mental, which is detrimental to them as mothers or renders pregnancy detrimental. The decision as to what is detrimental to health is to rest with the physician in charge of the clinic.

Checking Illicit Drug Traffic

The advisory committee of the League of Nations on opium and other narcotics has adopted a revised text of a narcotics convention, asking governments to provide legislation for severer treatment of drug traffickers and dealing with the "master mind" behind the traffic, which is often to be found in a country other than that in which the trafficking is taking place. The drug situation is now as follows: On the one hand, the progressive shrinking in the volume of legitimate trade in opium, coca leaves and manufactured drugs still continues. On the other hand, supplies for illicit traffic in manufactured drugs are more and more being drawn from clandestine manufacture, which continues to increase. The committee is pursuing the twofold objective of confining production and manufacture to the amount required for legitimate needs and to ensuring, through the strict application of the conventions, that the amounts so produced and manufactured in the legitimate trade do not escape into illicit traffic. It is also combating, with all the means at its disposal, the illicit traffic. As supplies are becoming more and more drawn from clandestine sources, the task becomes more difficult.

PARIS

(From Our Regular Correspondent)

May 23, 1934.

Changes in Symptoms of Acrodynia

Mr. Péhu of Lyons gave recently a discussion of acrodynia before the Academy of Medicine. He raised the question whether acrodynia today does not present different symptoms from the disease as observed last century. In 1828 the disorder took almost the form of a pandemic. It appeared suddenly and disappeared after a few months. The disease showed no predilection for children and it seems to have been contagious. Acrodynia, as known today, has continued for more than thirty years. It is not epidemic, is but slightly contagious, and affects chiefly children from 1½ to 5 years of age. There is, then, a resemblance between the two disorders but not a complete identity. During an interval of eighty years, the disease has undergone a number of changes. In support of his contention, Péhu gave detailed observations on the focus of acrodynia in the department of Saône-et-Loire, where forty-six cases were diagnosed from January 1925 to March 1934. The disease appears to be confined to the northeast part of the department. The cases almost always develop singly in each locality, although they are but a short distance apart. One cannot, however, speak of contagion proper. The annual number of cases ranges between three and five, with two maximums in 1930 and 1934, respectively. The cases occurred chiefly in children from 2 to 3 years old (twenty-one cases out of forty-six); no cases have been observed in adults or in children under 13 months. The symptoms are about as usual, although the evolution is long, extending over several months. The mortality is 10 per cent and results mainly from complications. Poliomyelitis is frequent in the same region. A more complete knowledge of this peculiar disease would be obtained if the practitioners who encounter it would make detailed observations.

Frequency of Tuberculosis in the Sexes

Prof. Léon Bernard and Mr. G. Poix have published a statistical research that reveals that tuberculosis in France, as in most countries, is more frequent in men than in women. The ratio is not the same at all ages, and one observes some differences from foreign countries. In France the mortality in females is higher than in males between the ages 5 and 25, after which it drops in females below that in males. In Switzerland, Italy and the Scandinavian countries, the mortality is higher in women than in men, whatever the age. After age 25, for each hundred deaths in males the number of deaths in females ranges from 73 to 79. After age 30, the excess of deaths in males becomes more marked. The inequalities in the mortality of the sexes is due to various factors but particularly to the work of women in factories. The greater frequency of tuberculosis in males explains why more requests for admission to sanatoriums are received from men than from women. These observations have a practical slant in the organization of the crusade against tuberculosis. In France there are only 9,393 sanatorium beds reserved for tuberculous men as against 10,404 beds for women, whereas the proportion should be just the reverse. Bernard concludes that it is time to reorganize

the tuberculosis services throughout the country. He urges the public authorities to take more accurate account of the real needs of the situation when they create new sanatoriums or render financial aid to them. In other words, a more rational and methodical plan should be adopted.

Foreign Mental Patients in France

The minister of public health has published a report on the number of foreign mental patients being cared for at present in France in the psychopathic hospitals, at the expense of the community or the government. The number cared for by virtue of reciprocity treaties with certain foreign countries is 1,435 out of a total of 3,250, or a little less than one half (Italians, 476; Poles, 605; Belgians, 117; Swiss, 27; Luxemburgers, 24; Spaniards, 107; Yugoslavs, 19; Austrians, 8; Hungarians, 6; Netherlanders, 15; Norwegians, 18; Swedes, 4; citizens of the principality of Monaco, 2, and Greeks, 15). The other foreigners cannot claim the right to treatment other than on the basis of their own resources but they are usually admitted for reasons of humanity or because the cost of exportation would be greater than the cost of treatment. The tendency of large countries is to refuse admission to foreign mental patients in their territory and to accept only their nationals if the country from which they have come will take charge of their repatriation. This is a manifest abuse of privileges, which is harmful to France, which of all countries has the most foreigners in its territory, among which there are many who are rejected by their own country.

BERLIN

(From Our Regular Correspondent)

May 21, 1934.

The Congress of Internal Medicine

The Deutsche Gesellschaft für innere Medizin held its annual session in Wiesbaden, April 9-12. Chairman Schittenhelm of Kiel emphasized that the society would serve the nation best if it would bring its investigations and its activities into harmony with the ideals of the new state. The training of the coming generation imposes new tasks in which the universities will play a more important part than they have in the past.

A DISCUSSION OF HEREDITY

Eugen Fischer of Berlin presented a paper on "Modern Theories of Heredity and Their Application to Man." It may be stated that the new mendelism, which has been found valid for many animal species, must be accepted also for man. In 1910 through research it was established that the chromosomes contain the fundamental principle that lies at the basis of hereditary transmission. The hereditary qualities are not fixed to a single pair of genes but to several pairs placed one after another in the form of a series. The theories pertaining to heredity in man rest today, in many respects, on a firmer basis than many other terms used in medicine; for example, the theory of hormones. The theories with regard to heredity throw light on many pathologic questions and open up many diagnostic possibilities. Race research is still undergoing many rapid changes. Conceptions that formerly were regarded constant are now considered variable. It is regarded today as highly probable that the hormones are influenced by the genes, in which connection a distinction is made between genes easily changed and those changed with difficulty. Fischer thinks that racial differences have been brought about by mutations. Since physical qualities have not been found to be reliable as racial characteristics, Fischer is inclined to attach more importance to psychic qualities. Such problems show the need of a race psychology. The first step would be to create a race psychiatry. Taken in the most general sense, disease and the transmission of racial characteristics have nothing in common. The high incidence of some diseases in certain races might be due to close inbreeding, but a marked tendency of a race toward the development of certain mutations may be in evidence. Fischer regards it as certain that the mental capacity and performance of the races vary to a certain extent. The specific culture of a people depends obviously on the racial qualities of its individual members. The physician must be thoroughly familiar with matters of heredity in order to be able to counsel patients with regard to propagation. He must be a judge with respect to hereditary pathology in particular in order to take a just stand toward the new law pertaining to sterilization.

Von Verschuer of Dahlem discussed the pathology of heredity. The gene (aside from the blood groups) is disturbed by environmental influence and by other genes. The best method for the delimitation of environment and hereditary characteristics and aptitudes is research on twins. Since enzygotic twins show a far reaching agreement in their hereditary qualities, diverse qualities in them must be due primarily to environment. But sometimes even in enzygotic twins an apparent disagreement is manifest; for example, owing to a more or less wide interval between the appearance of pathologic symptoms in the one twin and in the other (for instance, in tuberculosis), or owing to the fact that the symptoms are more marked in one twin than in the other. Frequently in schizophrenia the more intelligent twin exhibits graver symptoms. A hereditary quality is conditioned by the principal gene and the secondary genes. A secondary gene may, however, be the principal gene for some other characteristic.

For the necessary clarification of these problems, all opportunities for the securing of statistical material must be used. Bureaus of hereditary hygiene and clinics dealing with heredity are needed. Thorough research on whole racial groups must be carried out. Otto Naegeli of Zurich presented the clinician's attitude toward the subject, dealing with the hereditary pathology of internal and nervous diseases. He discussed the question as to the hereditary transmission of acquired characters. All hereditary diseases are intimately associated with changes in the genes, which, it seems, can be brought about only by mutations. No proof has been adduced that acquired characters are susceptible to hereditary transmission. Further research will doubtless increase the number of hereditary changes and of hereditary diseases in man up into the thousands. Man as a new creation on earth is still passing through a mutation phase, in which new genes frequently appear. These hereditary factors may constitute unimportant variants, or they may become of great significance in the central nervous system. On the other hand, there is no fundamental difference between abnormality and disease; for example, in diseases of the blood. Under this head may be mentioned the carriers of certain hereditary diseases, who themselves, while not manifestly ill, are frequently not entirely normal; for example, women who transmit hemophilia but who themselves have slight disturbances of coagulation. The conception of genotypical variants as evidence of degeneration must be categorically denied. The term "degeneration" has a wide range of meaning and is frequently used in an absolutely erroneous manner, which then leads to false conclusions.

Dr. W. Gross of Berlin, the director of the Aufklärungsamt für Bevölkerungspolitik und Rassenpflege, discussed "Hereditary Biology in Relation to World Views of the National Socialists." He mentioned that it was the first time that political problems had been brought into the discussion at this congress, usually given to consideration of purely scientific questions. It is the task of political leaders to map out the routes and objectives, whereas it is the task of science to furnish to political leadership the equipment for laying the substructure. But it can never be the task of science to form world views in the wider sense and to exert a controlling influence over the mental attitude of a whole people. The impulses that have been

set forth by science during the past fourteen years have not had a favorable influence on the world views of the German people.

Weitz of Stuttgart brought out the frequent occurrence of acquired cardiac defects in certain families. Evidence of pathologic hereditary trends may be found in vasoneurotic persons. Varices and status varicosus (telangiectasia and the like) often give evidence of dominant hereditary transmission; some renal disorders may be hereditary; for example, cystic kidneys. In pulmonary tuberculosis it is difficult to distinguish between hereditary and exogenous influences.

Luxemburger of Munich said that psychiatric hereditary research constitutes a special field of investigation, the fundamental basis of which is formed by studies on hereditary prognosis. The difficulty lies in the fact that in most hereditary psychic defects there is no evidence of a dominant hereditary transmission. The disorders in this field that are most important from the standpoint of heredity, such as schizophrenia, manic-depressive insanity and epilepsy, follow the laws of recessive hereditary transmission, so that not only the actual patients but also healthy persons who present a latent predisposition must be excluded from hereditary succession. The first important question is the detection of the probable hereditary carriers; the second is the early recognition of the pathologic condition and the elaboration of the prepsychotic type.

With the aid of numerous family trees, Hanhart of Zurich demonstrated the hereditary transmission of predisposition to idiosyncrasies with a special reference to bronchial asthma. The hereditary factor is the increased sensitization, the result of certain allergens. The hereditary process is of the dominant type, but sex fixedness cannot be demonstrated. Likewise migraine is a common manifestation in persons with hereditary idiosyncrasies.

With reference to pathologic hereditary units, there is a dangerous tendency to apply mendelian laws, since the hereditary units of man have not yet been adequately studied. Attempts at elucidation must be kept within bounds and not anticipate progress of knowledge. More research is needed as a basis for more definite conclusions. Further communications brought out that hereditary predisposition to diabetes is causally connected with the genotype. There are hereditary thrombotic conditions which can be more closely delimited by the functioning of the blood platelets. With respect to myotonia congenita, the hereditary process was followed in one family through seven generations, with evidence of dominant hereditary transmission.

LOCALIZATION PRINCIPLE IN THE NERVOUS SYSTEM

The second topic, "The Significance and Scope of the Localization Principle in the Nervous System," was presented by Förster of Breslau. He emphasized that one can make an exact topical diagnosis solely with clinical methods; iodized poppyseed oil and roentgenograms may sometimes deceive. In the discussion, Tönnis and H. R. Müller of Würzburg stated that a differential diagnosis in brain tumors can be made in two thirds of the cases, and in a further 20 per cent by means of roentgen rays. In fact, Tönnis was able, with the aid of encephalography and arteriography, to reach a diagnosis in 95 per cent of the cases, confirmed through later operations.

Papers on the problems of circulation followed. Jacobi of Bonn pointed out that patients with heart defects and decompensated circulation are highly sensitive to pneumothorax, whereas compensated patients react the same as healthy persons. Bruns of Königsberg discussed the influence of respiratory disturbances on the lungs and the circulation. Oehme of Heidelberg reported that his experiment with irradiation of the hypophysis in exophthalmic goiter proved unsuccessful. The paper by Butenandt of Danzig concerned "The Physiology and Chemistry of the Sex Hormones." The subdivision of the gonadotropic effective principle into two different substances has not been experimentally proved. The gonadotropic hormones, as Aschheim and Zondek have found, are present in abundance in the urine of gravidae; they are biologically identical with the hormone of the prehypophysis, but they take their origin from the placenta. Gonadotropic substance is not present in the hypophysis of the pregnant woman. The chemical composition of the gonadotropic hormones is not yet known. The testicular hormone is excreted in the male urine; Butenandt isolated it therefrom in a crystallized condition in 1931. Also the follicular hormone has been isolated in a crystal form. It is demonstrable in the blood and the urine of the sexually mature woman, in the placenta, in the urine of sexually mature stallions, and even in bituminous substances; but the corpus luteum hormone has been found thus far only in the corpus luteum. The follicular hormone promotes not only the growth of the genital tract but also, quite generally, the growth of plants. In pregnancy it brings about a loosening of the symphysis and a pigmentation of the linea alba. Furthermore, it effects a reconstruction of the uterine mucosa in the proliferative phase, whereas the corpus luteum hormone then launches the secretory phase of the uterine mucosa. The sex hormones function according to mutual laws, probably under the guidance of a special brain center. In a woman who had been subjected to bilateral ovariectomy, normal menstruation was effected by the administration of 250,000 mouse units of follicular hormone (1 million international units) and later of from 30 to 50 units of corpus luteum hormone.

R. Schröder of Kiel discussed "Normal and Pathologic Ovarian Function." Only disturbances of ovarian activity as such can be directly influenced by hormone therapy. For the treatment of disturbances due to muscular changes, other measures should be adopted. In menstruation occurring after three weeks, the corpus luteum phase is shortened; if the interval is prolonged, damage to the follicular function results. In connection with suppression of the menses, there is frequently an increased excretion of hormones, doubtless as the result of subliminal hormone production. Associated with persistence of the follicle, and likewise with long continued administration of the follicular hormone, one may observe hemorrhages, extending over several weeks, which have no connection with the menses. Concerning the quantity of hormones in the circulating blood, no definite statements can be made; likewise little is known about the qualitative changes occurring in the hormones. The corpus luteum hormone has been found effective in habitual abortion.

Siebke, a collaborator of Schröder, then discussed "The Therapeutic Uses of Sex Hormones." Unsuccessful results are due to false indications and incorrect dosage, and, to some extent, to the fact that one expects folliculin to accomplish what only the corpus luteum hormone can effect. In point of fact, often enormous quantities are indicated—much greater than are practical for the present.

According to Bürger of Bonn, the chemical changes occurring in the human organism in old age are due to increasing loss of fluids and the resulting increase in the dry residues of the tissues—which may lead to the formation of precipitates and to nutritional difficulties.

Further communications dealt with diverticulosis of the intestine, the action of extract of the suprarenal cortex, and the like. Professor Schöttmuller of Hamburg was elected president for the ensuing year.

Twin Births in Germany

According to recent statistics, there were 13,248 twins in Germany, about half of them being in Prussia. The Palatinate has three survivors from a set of quintuplets; Rhineland and

Hesse have each one set of living quadruplets. The remaining multiple births are distributed rather evenly over the cities and rural districts. There appears to be no foundation for the assertion that multiple births occur more frequently in any one German tribe or in any particular class of the population.

PRAGUE

(From Our Regular Correspondent)

June 2, 1934.

Congress of Dermatologists

The Congress of Slavic Dermatologists in Prague, May 19-21, was the third reunion of this organization, the first having been held in Belgrade and the second in Warsaw. The congress was presided over by Prof. F. Samberger of the university of Prague. It was organized by the Federation of Slavic Dermatologists, to which now belong national committees in Bulgaria, Czechoslovakia, Poland and Yugoslavia, the Russians being the only Slavic nation which has abstained from participation. The congress dealt with three topics: The first report presented observations on intradermal reactions presented by Dr. L. Popoff of Sofia. Tuberculosis of the skin was the second point of discussion. The third report, presented by Prof. R. Lesczinsky of Lwow, dealt with the relationship of the reticulo-endothelial system to the skin. Besides the main topics, free lectures and some thirty other communications were presented. The organization is growing and is establishing slowly a reputable tradition. The kinship of the languages of the Slavic nations is a strong bond which facilitates enormously the exchange of scientific information among the Slavic physicians, who in spite of using their own language in their meetings make themselves understood.

Dental Clinics

A national organization for the dental care of school children was organized in Czechoslovakia about a year ago. Systematic work on the protection of the teeth of school children was started in Prague in 1907 but remained limited to this city. Later other cities followed with the erection of dental clinics for school children, but there was no institution for central direction of this work. At present about forty dental clinics are functioning in connection with the work of the Junior Red Cross. It is estimated that about 150,000 school children obtain dental care in these clinics, which of course represents a small proportion of the 2,000,000 school children in the state. The main effort of the organization tends toward the foundation of new school dental clinics. In some places as many as 97 per cent of the school children have left the school with a perfect condition of the teeth. Experiments are also conducted with mobile dental clinics for children in rural territories. The program concerns prophylactic care, which is mainly educational, and the nutrition of the child. The rapid development of the organization in spite of the difficult times was made possible through the help of the Central Insurance Body.

Birth Control

The Federation for Birth Control was recently founded in Prague. Some years ago this movement had only a few promoters. The propaganda for the legalization of abortion of the last few years visualized the amount of suffering that results from undesired pregnancies and made the public realize that there was a way to prevent it. The federation was organized mainly on the initiative of women's societies and the organizations of social workers. A deputation presented recently to the minister of health a memorandum in which the attention of the public authorities was called to the fact that the prevention of conception has become in Czechoslovakia a lucrative branch of quackery. The assistance of public authorities was sollicited for educational propaganda against this mischief, and help was asked for the erection of consultation stations for mothers giving advice in all matters pertaining to matrimony. The first station of this kind was opened recently in Brno with the assistance of the Red Cross. The main difficulty that this type of work encounters is the resistance of the Catholic Church, to which belong the majority of the population. The Czechoslovakian Church declared itself ready to support consultation stations for the promotion of hygiene in matrimonial life provided they are conducted by medical specialists. The official organizations for child welfare stand aloof from the new organization, maintaining that the preservation of children's lives is their main concern.

Increase in Number of Physicians

The rapid increase of physicians in Czechoslovakia is causing medical organizations to worry. Recently a comparison was brought to light between the number of physicians practicing in Czechoslovakia in 1930 and in 1933. It appears that there was an increase of 20 per cent of physicians within this time. The greatest increase could be observed among the dental surgeons. In 1930 there was one practicing physician to 2,046 inhabitants; in 1933 there was one to only 1,689. If the number of physicians continues to increase at the same rate there will be within about eight years one physician to 1,200 inhabitants, which is considered the limit at which physicians can make a living under the present conditions. The demand for the restriction of medical students is being expressed with a strong emphasis.

Congress of Socialistic Physicians

An international congress of socialistic physicians was held in Brno, May 21, with representatives from London, Oslo, Budapest, Zurich, Copenhagen and Stockholm. There is a tendency among a number of physicians of Europe to organize themselves with political parties, including those with socialistic tendencies. Especially among the young physicians there can be observed a tendency to engage in political activities. Such a movement is noticeable in Czechoslovakia, and this country was selected for this international congress. The request of the communistic physicians to be admitted into this organization was refused by the congress. This group of physicians in Cezchoslovakia has been able to found its own monthly periodical.

Birthday of Weigner the Anatomist

The sixtieth birthday of Dr. Charles Weigner, professor of topographic anatomy, was celebrated recently. Professor Weigner is one of the dominant personalities of the Czech Medical Faculty of Prague. Under his teacher Prof. J. Janošík he began as a medical student his work on the anatomy of the nervous system, which he pursued for ten consecutive years. In 1901 he began lecturing at the faculty of medicine and was appointed professor in 1906. In 1918 he obtained the chair of topographic anatomy, and in 1928 he succeeded Professor Janošík as the head of the Anatomical Institute of the Charles University in Prague. He has written some 180 scientific papers. The most important part of his work deals with anatomy, which has a direct bearing on practical medicine, especially surgery. With Prof. L. Syllaba he pursued studies on the correlation of physical observations to morbid conditions of the internal organs. His further work was concerned with the topography of the brain and skull, especially with regard to brain surgery. He started early to write a handbook of topographic anatomy, which is in its second edition. He has a profound influence on the growing generation of the medical profession and he is among the most diligent and popular teachers. He has never confined his efforts to the medical faculty. He became the organizer of the movement for scientific direction of physical education. He organized courses for

teachers of physical education and grouped around himself the most important workers from this field. After the World War he played also a rôle for a time in politics. His work in popular education regarding the knowledge of the human body and of physical education is based on his conviction that modern science must not remain enclosed within the walls of the university but that its chief function is to provide service to the broadest masses of the population.

Biologist Dies

The founder of Czech medical biology, Prof. Vladislav Růžička, died recently in Prague, at the age of 64 years. His whole career was connected with the Czech medical faculty of Prague. He made fundamental observations on chromatin. According to him, the external conditions in which the ovum develops determine the constitution of the individual, which is the only feature that can be inherited. This constitution is a certain morphochemical structure of living matter which possesses the ability to reproduce this type of structure. World wide recognition was accorded to his theory of the causes of aging. Practically all his work after 1917 was concentrated on this problem. He recognized that in the course of life there proceeds a densification of living matter which can be demonstrated by physicochemical methods. He called the densification of colloids in the living matter hysteresis of the protoplasm, and this term was accepted by the biologists of the world. Although the center of Růžička's activity lay in laboratory work, he was at the same time a prominent teacher and organizer. He accomplished the erection of a new institute of medical biology in the medical faculty of Prague, of which he became the first chief. He organized also the Czechoslovak Eugenical Society, of which he was the first president. Owing to his activities, a number of eugenic stations were organized. His international reputation found its expression in the fact that with Pearl and Löhner he became the editor of the *International Archives of General Biology*. He was a member of the International Committee of Eugenics in London and, since 1930, vice president of the International Federation of Eugenic Organizations. In 1930 he served as a dean of the Medical Faculty of the Charles University of Prague. His pupils hold chairs of medical biology on all the Czech medical faculties of Czechoslovakia.

Restriction of Foreign Physicians

The question of foreigners trying to obtain permission to practice medicine in Czechoslovakia is becoming acute. After the war, emigration from Russia brought to Czechoslovakia many foreign students; later there was an influx of Jewish students from Poland, Rumania and Hungary. At present, only citizens who hold a medical diploma from a Czechoslovakian university have the right to practice in the country. It was thought that the lack of citizenship would prevent foreign students from establishinging themselves for practice after graduation. Nevertheless in the course of their studies most of them became acquainted with local conditions, found access into Czechoslovakian families, and through their support obtained citizenship in many cases. This question has again attracted general interest as the new régime started in Germany. Many young emigrants, especially of Jewish origin, came to Prague asking for admission into the faculties of medicine. A recent meeting of all the chambers of physicians dealt with this problem and elaborated a memorandum addressed to the government. The document recommends that university authorities be strict in interpreting the preliminary qualifications of those who ask for registration. It favors the introduction of a clause in the diploma specifying that the graduate shall not be admitted to practice even if he obtains citizenship in Czechoslovakia.

Marriages

DAVID KENNETH LEIBY, New Hope, Pa., to Miss Winifred Lawson Rainford of Philadelphia, June 29.

CHARLES EDWARD DOWMAN JR., Atlanta, Ga., to DR. CORDELIA KOCH of Towson, Md., June 14.

AUBREY H. WILLIAMS, Fort Wayne, Ind., to DR. A. BERNICE MORRIS of New Haven, June 12.

WILLIAM M. ROBINSON, Richmond, Va., to Miss Bluma Dolinsky of Chicago, May 27.

HERSCHEL STRATTON MURPHY to Miss Helen Moore, both of Roselle, N. J., June 30.

Deaths

Frederick C. Ainsworth ✠ Major General, U. S. Army, retired, Washington, D. C.; University of the City of New York Medical Department, 1874; entered the army as an assistant surgeon in 1874; promoted to major surgeon in 1891, colonel in 1892, brigadier general in 1899, major general in 1904 and the adjutant general in 1907; retired in 1912 at his own request after thirty years' service; aged 81; died, June 5, of bronchopneumonia and arteriosclerosis.

Frank Roy Morton ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; past president and secretary of the Chicago Medical Society; fellow of the American College of Surgeons; chief surgeon to the Standard Oil Company of Indiana; on the staff of the Henrotin Hospital; aged 53; died, June 16, in Joliet, Ill., of coronary thrombosis.

Carl John J. Holman, Los Angeles; Rush Medical College, Chicago, 1899; fellow of the American College of Surgeons; at one time member of the Minnesota State Board of Medical Examiners; one of the founders of the Mankato (Minn.) Clinic; formerly on the staff of St. Joseph's Hospital, Mankato; an honorary member of the Blue Earth County (Minn.) Medical Society; aged 64; died, May 30.

Martin Van Buren Godbey, Charleston, W. Va.; Maryland Medical College, Baltimore, 1905; fellow of the American College of Surgeons; member of the state board of health, 1909-1913; served during the World War; at one time member of the state legislature; formerly physician in charge of the McKendree (W. Va.) Hospital, No. 2; aged 54; died, April 26, of heart disease.

Charles Carroll Geer ✠ First Lieut., U. S. Army, retired, Greenville, S. C.; Bellevue Hospital Medical College, New York, 1895; veteran of the Spanish-American War; entered the regular army as an assistant surgeon in 1901 and retired in 1904 for disability in line of duty; aged 63; died, May 18, of cerebral hemorrhage and arteriosclerosis.

James Norman McCoy, Vincennes, Ind.; University of Indianapolis Medical Department, 1896; member of the Indiana State Medical Association; member of the American Roentgen Ray Society; served during the World War; formerly secretary of the county board of health; aged 60; died suddenly, April 16, of angina pectoris.

Frederick Walker St. Clair ✠ Indiana, Pa.; University of Pittsburgh School of Medicine, 1913; member of the Associated Anesthetists of the United States and Canada; past president and secretary of the Indiana County Medical Society; county coroner; served during the World War; aged 48; died, June 6, of malignant endocarditis.

Francis Joseph Broghammer ✠ Superior, Wis.; Marquette University School of Medicine, Milwaukee, 1913; past president and secretary of the Douglas County Medical Society; served during the World War; on the staff of St. Mary's Hospital; aged 45; died suddenly, May 29, of heart disease.

Kim Devol Curtis, Phoenix, Ariz.; Baltimore Medical College, 1907; member of the Arizona State Medical Association; at one time on the staff of the State Hospital, No. 2, St. Joseph, Mo.; aged 49; on the staff of the Arizona State Hospital, where he died suddenly, June 1, of cerebral hemorrhage.

Ludwig Schoenthal, New York; Medizinische Fakultät der Universität Frankfurt-am-Main, Frankfort-on-Main, Germany, 1923; associate in clinical pediatrics, Cornell University Medical College; associate attending pediatrician to the New York Hospital; aged 34; died, June 15, of staphylococcic septicemia.

Lester Hall Hummel, Salem, N. J.; Baltimore Medical College, 1897; member of the Medical Society of New Jersey; member of the board of education and board of health; on the staff of the Salem County Memorial Hospital; aged 61; died, June 7, of myocarditis and cerebral hemorrhage.

Theodore Breck, Brecksville, Ohio; Cleveland College of Physicians and Surgeons, Medical Department of the University of Wooster, 1894; aged 66; died, June 13, in the Glenville Hospital, Cleveland, of complications following an operation for appendicitis.

Walter B. Foss ✠ Ashley, Pa.; College of Physicians and Surgeons, Baltimore, 1887; for many years bank president and member of the board of health of Ashley; aged 74; died, May 6, in the Wilkes-Barre (Pa.) General Hospital, following an operation.

Paul Hays Fithian, Danville, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1890; Rush Medical College, Chicago, 1891; member of the Illinois State Medical Society; aged 68; died, May 22, in Kankakee, of cerebral hemorrhage.

John Otis Garfield Niles ✠ Everett, Mass.; Harvard University Medical School, Boston, 1914; aged 54; died, June 5, presumably of heart disease, while swimming near his summer home on Plum Island.

Emil Albert Ruka ✠ Muscoda, Wis.; Rush Medical College, Chicago, 1915; served during the World War; aged 43; died, May 29, of internal hemorrhage caused by carrying a patient up the stairs.

James Wilson Clements, Subligna, Ga.; Medical College of Virginia, Richmond, 1864; member of the Medical Association of Georgia; Confederate veteran; aged 94; died, June 5, of acute gastritis.

Blanche Alpine Denig, Oakland, Calif.; Woman's Medical College, Chicago, 1891; member of the Massachusetts Medical Society; aged 72; died, May 21, of coronary occlusion and arteriosclerosis.

Finley D. Blackwell, Hochheim, Texas; Tulane University of Louisiana Medical Department, New Orleans, 1898; aged 59; died, May 28, in a hospital at Cuero, of acute nephritis.

John Henry Franklin ✠ Guadalupe, Calif.; University of California Medical Department, San Francisco, 1906; aged 54; died, April 24, in Santa Maria, of cardiorenal vascular disease.

Julius Arthur Bullard, Montrose, Pa.; Hahnemann Medical College of Philadelphia, 1872; aged 83; died, May 25, in Miami, Fla., of coronary thrombosis and arteriosclerosis.

Henry Peter Hansen ✠ Burns, Wyo.; Drake University College of Medicine, Des Moines, 1907; aged 48; died, April 28, of hemorrhage and hypertrophic biliary cirrhosis.

James Hodgen Burkhead, Middleboro, Mass.; College of Physicians and Surgeons, Baltimore, 1907; aged 53; died, May 13, of cholangeitis and embolism.

Ellsworth Martin Burke ✠ Havre, Mont.; University of Louisville (Ky.) School of Medicine, 1921; aged 42; died, May 28, of hypertensive heart disease.

Jonathan Evans Clark, Ringgold, Ga.; Chattanooga (Tenn.) Medical College, 1900; aged 84; died, May 9, near Boynton, of pernicious anemia.

Victor Charles Doherty, Detroit; University of Michigan Medical School, Ann Arbor, 1898; aged 58; died suddenly, June 10, of coronary occlusion.

William McGlasson Corey, Erlanger, Ky.; Eclectic Medical Institute, Cincinnati, 1886; aged 68; died, May 29, of angina pectoris and arteriosclerosis.

Orlando G. Gibson, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1897; aged 61; died suddenly, May 30, of heart disease.

Ulysses Eugene Hartley ✠ St. Louis; St. Louis University School of Medicine, 1918; aged 42; died, June 6, of poison, self-administered.

Willard Fiske, Lancaster, Texas; University of Tennessee Medical Department, Nashville, 1884; aged 83; died, May 19, of cerebral hemorrhage.

William Spankie, Wolfe Island, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1885; aged 74; died, May 27, in Kingston.

Henry A. Denson, Bennett, N. C.; Central College of Physicians and Surgeons, Indianapolis, 1887; aged 80; died, June 2, of uremia.

Lonzo Abner Duck, Webster Groves, Mo.; St. Louis College of Physicians and Surgeons, 1903; aged 55; died, May 18, of heart disease.

Correspondence

A METHOD FOR THE PRESERVATION OF CLEANLINESS ON PLASTER-OF-PARIS CASTS

To the Editor:—Members of the profession who use to any extent plaster-of-paris casts universally find that sooner or later the plaster becomes soiled. This is true especially with children, who during their activities ruin the clean appearance of the cast as it was originally applied. Parents as well as the patients themselves are constantly asking to have a new cast or the old one cleaned in order to make a more presentable appearance. Cleaning is, of course, practically impossible and one is loath to apply new casts.

This problem was recently solved for me by a patient. I have investigated the literature and have been unable to find the method described, although it is so simple that I would hardly feel fair in calling it original.

A cast had been applied to this man's hand, wrist and forearm for the care of a fractured carpal scaphoid bone. Shortly after the application he left for a month's vacation in Bermuda. On his return he told me that in order to keep his cast presentable he had applied quick-drying white lacquer. This left a glossy, smooth coating, which could be easily washed without injury to the cast. Once, because of chipping of the paint, he applied a new coat.

The simplicity of the procedure makes the method a valuable adjunct for the care of any cast. It can be applied any time after the plaster is dry and should prove useful to any one doing fracture surgery.

PAUL W. GREELEY, M.D., Winnetka, Ill.

PNEUMOTHORAX IN PNEUMONIA

To the Editor:—A number of Eastern hospitals have lately reported experimentation with pneumothorax in pneumonia. In 1915 and 1916 I had some correspondence with the late Dr. John B. Murphy when he was pioneering in the pneumothorax treatment of tuberculosis.

I made the suggestion to him at that time that the same treatment be applied in early unilateral lobar pneumonia. The following reasons were offered:

First: Rest to the involved lung.

Second: Relief of pleural pains, minus opiates. Under date of April 15, 1916, Dr. Murphy wrote me:

> I have referred it to my associate, Dr. Kreuscher, who has charge of the pneumothorax department of my clinic. I have given instructions that it be done as soon as possible and will be pleased to report to you. Thanking you for the suggestion, and with best wishes, I am,
>
> Yours very truly, J. B. MURPHY.

In view of the fact that Dr. Murphy died in August 1916, this work was not carried on as had been planned.

THOMAS J. WEST, M.D., Pasadena, Calif.

STAPHYLOCOCCUS TOXOID IN PUSTULAR DERMATOSES

To the Editor:—The communication from our Canadian colleague Dolman in THE JOURNAL, May 19, criticizing the report of Kindel and Costello on their observations of the effect of staphylococcus toxoid on pustular dermatoses is evidently based on a misunderstanding. He fails to appreciate the background for the study and report of Kindel and Costello.

Clinical departments in teaching institutions of medicine in the United States, as elsewhere, are continually being importuned by pharmaceutical manufacturers to try this or that

product recommended in various clinical conditions. The reason for this is self evident.

In Dr. Howard Fox's department of dermatology in the New York University and Bellevue Hospital Medical School it has always been the policy to give drug manufacturers a respectful hearing and, when the representation warranted, to assign interested members of the staff to make short but properly controlled clinical studies to secure first hand knowledge in respect of the claims that are made. Dr. Fox has rightly felt that teachers in medicine should be in the vanguard of those acquainted with newer methods in diagnosis and therapy and active participants in the controversial phase through which these newer things must of necessity pass.

Kindel and Costello's report is based on the use of a toxoid made by a single but reputable manufacturer of biologicals. Their deductions are sound. What Dr. Dolman fails to appreciate is that Kindel and Costello are directing their charge of overenthusiasm not at our Canadian colleague but at the inarticulate many who have endorsed to this manufacturer the very product Kindel and Costello used.

HERMAN SHARLIT, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TANNING OF SKIN

To the Editor:—Please tell me what truth there is in such remarks as "Vinegar dabbed on the skin before going out for a sunbath will hasten a quick tan and prevent peeling" or "Olive oil will do the same thing." Are there any substances which, if applied before the patients sun themselves, will hasten a tan or prevent peeling? Please omit name and address.

M.D., California.

ANSWER.—Vinegar evaporates in the sunlight and has no effect on tanning or peeling. Nonvolatile oil on the skin interferes to some extent with the absorption of light and therefore protects against sunburn and the subsequent peeling. Nothing will hasten tanning; it depends on the ability of the pigment-producing cells in the skin to react evenly to the stimulus of light. Most skins of dark complexion have this ability, but some blondes lack it and burn without subsequent tanning or freckle as a result of exposure to light. Such skins cannot be changed; they must be protected from strong sunlight if such reactions are to be avoided.

Tanning without the discomfort of sunburn or the inconvenience of peeling can be acquired only by careful dosing of sunlight, short exposures at first, gradually lengthened.

POSSIBLE SENSITIZATION TO NAIL WHITE

To the Editor:—A patient tells me that every time she uses Cutex nail white (a substance that is spread under the nails) she has a severe diarrhea, lasting several days. Is the diarrhea caused by the nail white? Please omit name.

M.D., New York.

ANSWER.—No analysis of this product has been made by the laboratory of the American Medical Association and the manufacturer has not responded to a request for information regarding its constituents. The "nail white" is a suspension of an insoluble white powder in a highly perfumed volatile base. On application to the skin, the base evaporates promptly and leaves the powder adhering to the skin.

Assuming that the cosmetic preparation is really responsible for the attacks of diarrhea, two possibilities suggest themselves: that one or more of the constituents of the preparation are absorbed and produce a toxic effect or that the patient is hypersensitive to one or more of the constituents. A third possibility is that the patient is a malingerer who takes some cathartic at the time she uses the "nail white" in the attempt to make a case against the manufacturers.

The first possibility is a far fetched one. If any of the ingredients of this preparation were so toxic, how could any one be found willing to make it?

The second is a real possibility. Sensitization to a degree sufficient to produce a prompt diarrhea is not hard to imagine. As the constituents of the preparation are not known, it is impossible to determine by skin tests or inhalation tests to just what substance the patient is sensitized. Tests can be made with the whole preparation but, in view of the third possibility, should be made in the hospital with the patient under the strict surveillance of a nurse trained in this sort of work. Hysterical patients, who constitute the majority of malingerers, are sly and can deceive most physicians and nurses.

The treatment of the case is easy. Let the patient be satisfied with soap and water cleansing. The water used in washing dishes and clothes is said to be particularly efficacious.

GASTRIC LAVAGE

To the Editor:—Please recommend adequate equipment for stomach washing at home in cases in which poison has been swallowed, stating definitely the sizes of tubes to be used at different ages. What position is best for a small child undergoing this treatment? Please omit name.

M.D., New Jersey.

ANSWER.—A stomach tube, if it is available, or a soft rubber catheter may be used to wash the infant's or child's stomach. The catheter or tube is connected to one-fourth inch plain rubber tubing with a glass connecting tube. A funnel is inserted into the upper end of the tube. An additional opening may be cut into the catheter about half an inch above the original eye, or a tube may be used in which the lower end is entirely open. The catheter or stomach tube used for the washing should be the largest size that can be readily passed through the esophagus into the stomach. It has been suggested that the catheter selected should be about the size of the child's index finger. A French size 18 catheter or, in older children, one of size 20 to 26 on the French scale may be employed. The soft rubber stomach tubes 5 feet long may be obtained in the instrument shops, plain, with a funnel or with bulb and funnel attached, with the lower end open and an additional eye. These sizes vary from 22 to 32, French scale. It is obvious that the size of the catheter to be used depends on the weight and development of the infant or child; consequently the size of the tube required will vary in individual cases. When the lavage is to be performed, the child should be securely wrapped in a sheet so as to fasten the arms to the sides of the body. The child should be firmly held in the attendant's lap or may be placed on a table, lying on the side. In this position, with the help of one or two assistants, the patient may be held securely and the treatment completed.

HYPERTENSION AT BIRTH—FETAL KIDNEY—CONGENITAL IMPERFORATE URETHRA—AMNIOTIC FLUID

To the Editor:—A case of congenital polycystic kidneys in an infant, aged 6 months, with hypertension and the finding post mortem of marked hypertrophy and dilatation of the left side of the heart presented for discussion at a recent clinical pathologic conference has stimulated several questions to which I cannot seem to find satisfactory answers: 1. Has hypertension been found present at birth? 2. Do the fetal kidneys excrete urine during intra-uterine life? 3. Are there cases of congenital imperforate urethra on record? If so, what are the pathologic changes in the kidney and the bladder? 4. What is the source of the amniotic fluid?

WILLIS P. BAKER, M.D., Santa Ana, Calif.

ANSWER.—1. There is no available material to substantiate an opinion regarding hypertension at birth. It is present possibly in cases of congenital polycystic kidneys.

2. Almost all investigators agree that the fetal kidneys are capable of excreting urine, especially in the later months of pregnancy. Undoubtedly the waste matter of metabolism of the fetus is carried away by the fetal circulation to the placenta and then is absorbed into the maternal circulation and excreted through the maternal kidneys. Consequently there is no need for renal function in the fetus. The fact that a new-born child will pass urine immediately after birth and the presence of casts in the urine at birth would denote renal activity. The presence of urine-like fluid in the cysts of polycystic kidneys at birth and the presence of hydronephrosis in cases of imperforate urethra also suggest renal activity of the fetus.

3. There are cases of congenital imperforate urethra on record. This condition may be associated with various conditions. There may be distention of the bladder and ureters and hydronephrosis. Urine may be discharged through the urachus or, in cases in which the urachus is not wholly patent, fluid may collect, forming single or multiple cysts of the urachus, which at times contain large quantities of urine. If the normal exit of the urine is obstructed, the remnant of the urachal tube

may carry on the function of a urinary fistula. Occasionally, bladder diverticula have been observed in these cases. Exstrophy of the bladder may be an associated malformation. If, in the male, the imperforation is at the distal end, the entire urethra may be dilated into a sac. Owing to the length and the relation to the internal generative organs, malformations are more frequently seen in the male urethra than in the female urethra.

4. Amniotic fluid is normally derived from the fluids of the mother that have been modified by the secretory action of the epithelial lining of the amnion. The fetal kidneys probably take little or no part in its production, under normal circumstances. Hydramnios is occasionally seen in cases of fetal abnormality, such as hemicephalus or spina bifida. In these conditions the excess fluid is thought to be a result of excessive urinary secretion due to stimulation of unprotected nerve centers. More frequently, hydramnios is associated with obstruction to circulation within the cord or the fetus. Histologic changes interpreted as manifestations of secretory activity have been observed in the amniotic epithelium. A great part of the amniotic fluid may represent a transudation through the surface of the fetus and the vessels. There is evidence to support the belief that a considerable amount of amniotic fluid is swallowed by the fetus and absorbed through the digestive tract.

NASAL AND PHARYNGEAL SECRETION IN TUBERCULOSIS

To the Editor:—Will you kindly tell me why a patient with advanced tuberculosis, but practically without active symptoms, should have a deficiency of lacrimal and mucous membrane (nose and mouth) secretion. The patient is thin but takes an adequate amount of fluid and a general diet, though not adequate for gain in weight. Few drugs are taken, including acetylsalicylic acid, an occasional cough sedative and dilute hydrochloric acid. At present small doses of insulin are being tried, in an effort to improve the weight. The dryness of the mucous surfaces is so marked as to cause definite discomfort, and this has extended over a long period of time. Will you suggest some measure that will improve the condition? Please omit name and address. M.D., Virginia.

ANSWER.—As a rule, in tuberculosis there is no involvement of the lacrimal apparatus or of the secretion of the lacrimal gland of the nasal or the oral mucosa. It is possible, however, that the dryness of the mucous membrane is due to a marked anemia or to a dehydration of the individual from some cause other than tuberculosis. Careful blood examination is therefore advisable. Sometimes the use of slightly acidulated water, that is to say, water to which a few drops of lemon juice have been added, will often stimulate the flow of saliva and so relieve the dryness of the mouth. In the nose, the use of a few drops of a bland oil such as white liquid petrolatum is efficacious. At times, from three to five drops of saturated potassium iodide solution by mouth three times a day will increase the nasal and pharyngeal secretion.

TREATMENT OF GINGIVITIS

To the Editor:—Can you suggest treatment for a case of refractory gingivitis in a boy of 3½? About a year ago, swelling and ulceration of the gums with fever developed suddenly. A microscopic examination for Vincent's angina was negative. Another examination about two months ago was negative. The mother has used an assortment of local applications, including mercurochrome, boric acid, hexylresorcinol S. T. 37, hydrogen dioxide and methylene blue prescribed by the attending physician and two dentists. The child was born by cesarean section and was bottle fed. His development has been normal and his diet has been well supervised. He is apparently quite normal in every way, except that cod liver oil in any form and viosterol have always nauseated him. At present the lesions have caused recession of certain portions of the gum nearly to the roots of the teeth. At times there is almost complete healing and then the process flares up with no relation to the current medication. The tongue always has a light white coating. Citrus fruits and tomato juices now irritate the gums. About two years ago the father had all his teeth extracted for pyorrhea. He insists now, as then, in using his own and the baby's eating utensils interchangeably. Is it possible that the child has pyorrhea? Please omit name. M.D., Nevada.

ANSWER.—In this case, as in almost every case of refractory disease, a personal examination of the patient is important. Without that opportunity the diagnosis is merely speculative. It is assumed that the condition is not due to Vincent's infection or a dietary deficiency, since these have apparently been considered. One should make sure that the oral hygiene has been not only stressed but also properly executed. Too often the simplest requirements are overlooked. The mouth should be freely irrigated and kept as clean as conditions will permit.

Next a thorough examination of the blood should be made. Blood diseases are responsible for many baffling oral lesions. The disease known as agranulocytic angina closely resembles Vincent's infection. The blood picture shows a marked reduction in leukocytes and an extremely low percentage of granulocytes. The principal clinical symptoms are ulcerations of the mucous membranes, most frequently in the mouth and pharynx, fever and occasionally jaundice.

If it is certain that the local treatment has been carried out in a satisfactory manner and that there is no blood disease, an allergy expert should be consulted. The interchanging of eating utensils will not transmit pyorrhea; however, the practice is obnoxious for other reasons. It is unlikely that the child has pyorrhea.

PERNICIOUS ANEMIA WITH NERVE INVOLVEMENT

To the Editor:—I am writing to ask whether there is any additional treatment you would suggest for pernicious anemia. The patient is a woman, aged 49. She weighs 205 pounds (93 Kg.) and her height is 5 feet 11 inches (180 cm.). The onset of the disease was in December 1931. She received inadequate treatment and several relapses occurred. I first saw the patient in September 1933. The blood count showed red blood cells 3,720,000, hemoglobin 62 per cent (Sahli), white blood cells 7,500, a few poikilocytes, and cells of various sizes. At this time she was taking fifteen capsules of Extralin daily. She complained of numbness, soreness in the extremities, difficulty in walking and various areas of anesthesia in the lower extremities. I began giving injections of 3 cc. of Lederle solution liver extract parenteral refined and concentrated into the gluteal muscle every three days. She also took four Lederle iron ammonium citrate capsules daily. The red blood cells rose to 4,340,000; the hemoglobin was 80 per cent in November. November 20, I began giving her 3 cc. of Lederle solution liver extract parenteral refined and concentrated intramuscularly daily for five days, then every two days for seven injections. The red blood cells rose to 4,920,000; the hemoglobin was 90 per cent. Since then I have been giving her intramuscular injections twice weekly of 3 cc. of either Lederle solution liver extract parenteral refined and concentrated or solution liver extract-Lilly, using a 2 inch needle. The red blood cells have risen to 5,160,000 and the hemoglobin to 90 per cent. There are variations, however, and at present the red blood cells are 4,710,000 and the hemoglobin is 90 per cent. For three weeks I gave her concentrated liver extract-Armour, one tablespoonful three times a day with the intramusclar treatment twice weekly, but no improvement resulted. The patient feels better and stronger but does not seem to respond to oral or parenteral treatment. Apparently oral administration of liver extract is ineffective, for she had taken Extralin for many months along with the parenteral treatment. Dilute hydrochloric acid was given only for symptoms as indicated. Kindly outline additional treatment. Please omit name and address. M.D., Pennsylvania.

ANSWER.—From the description of the case presented one cannot positively rule out the diagnosis of multiple sclerosis, particularly in view of the loss of sensation in various areas of the lower extremities. Multiple sclerosis is not infrequently accompanied by a moderate degree of anemia, generally of the hypochromic type. In multiple sclerosis the anemia should respond to the treatment outlined, whereas the involvement of the cord would probably be affected very little.

Also in an entirely resistant case on must keep in mind the possibility of the presence of a cord tumor or syringomyelia, which may produce changes not unlike those described and may either be a complication of pernicious anemia or be associated with an anemia from loss of blood as an incidental finding.

Assuming that the case is one of pernicious anemia, it is possible that improvement may be hindered by complicating diseases. The common complications are disturbances of the gallbladder, genito-urinary system (such as cystitis generally associated with pyelitis), severe constipation and excessive weight. The latter condition may aggravate disturbances of locomotion. In the presence of complications the intensive treatment outlined might well improve the blood but be insufficient to cause definite improvement in those disturbances associated with spinal cord damage.

Damage to the cord that has persisted for a considerable period of time with inadequate treatment of the anemia is often difficult to control and only a minimal amount of improvement may be expected.

Treatment should consist of sufficient amounts of liver substance to maintain the red blood cell count at a level well above 5,000,000, and this can best be done by means of the intramuscular injections of the concentrated solution of liver extract. It is well to continue the use of the iron unless the hemoglobin level reaches a high point.

In addition, the locomotor disturbances may be improved by exercises, under the direction of a physical therapist trained in this field, to retrain the muscle function and to improve the patient's balance.

Complications should be treated and the weight should be reduced.

Under such therapy, improvement may occur only during an interval of several weeks or months and the amount of improvement that may be expected is inversely proportional to the amount and duration of the cord damage as influenced by inadequate treatment.

BRONCHIECTASIS

To the Editor:—Please advise what to do with a patient presenting the following history: A man, aged 50, had syphilis for about twenty-six years and has taken treatment several times during this period. He uses tobacco but no alcohol. About fifteen years ago he contracted influenza and developed a bronchiectasis that is gradually becoming worse. On account of the constant cough he is compelled, most of the time, to sleep sitting in a chair. Up to three weeks ago he felt very well but the bronchiectasis commenced to give more trouble and he has developed a headache that is aggravated by coughing. Would you advise treating this man for syphilis? Also outline just what treatment you think necessary. I am able to control the cough with codeine, but it causes nausea and makes him feel very uncomfortable. The Wassermann reaction is two plus. He has been this way for years and no amount of treatment has made it change. There are no other symptoms of syphilis except the slight headache and that is not constant. Coughing always produces this headache. Please advise what you think is the best treatment for this man. Please do not mention name.

M.D., Oklahoma.

ANSWER.—In the treatment of bronchiectasis, promotion of peroral drainage is of paramount importance and may be obtained either by bronchoscopic aspiration practiced weekly or more often, or by postural drainage carried out two or three times daily, the patient choosing periods when he has the greatest inclination for coughing. The use of opiates is as a rule to be interdicted, because of their inhibitory effect on coughing, the most effective natural means of eliminating retained infected secretions, and because they tend to thicken the bronchial secretions by inhibiting the cellular activity. It has been suggested by the Jacksons that the internal administration of alkalis may relieve coughing more effectively than sedation.

Additional information is essential before determining whether or not this patient should receive antisyphilitic treatment. A two plus Wassermann reaction if repeatedly obtained indicates the presence in the serum of small quantities of reagin and presumably points to the persistence of the syphilitic infection. It has been shown that intermittent treatment, such as this patient apparently received, is more likely to be associated with Wassermann fastness than if the treatment had been continuous, and, if carefully sought for, definite lesions particularly in the cardiovascular or central nervous symptoms, bones or viscera may be revealed. Careful physical, roentgen and fluoroscopic examinations of the heart and aorta, spinal puncture, neurologic and ophthalmoscopic examination, study of the visual fields and close inspection of and if necessary roentgenograms of the bones for periosteal thickening are indicated. Subsequent treatment is dependent on the results of such studies. J. Earle Moore's Modern Treatment of Syphilis, recently published by Charles C. Thomas, Springfield, Ill., presents in an excellent manner methods for treating the various forms of syphilis and may be highly recommended for its practical appeal.

X-RAYS FOR PRURITUS ANI

To the Editor:—In Queries and Minor Notes in THE JOURNAL, February 24, page 638, in reply to M.D., Ohio, suffering from pruritus ani, you say that "x-rays . . . will stop anal itching in about a month and with absolute safety." Leaving out the safety question, which is debatable, any proctologist of experience will tell you that when x-rays do help (they are not successful in all cases) they relieve only for a period of several months to return later with a vengeance, at which time, owing to previous treatment with x-rays, it becomes refractive to treatment and well nigh incurable.

MICHAEL CANICK, M.D., Brooklyn.

ANSWER.—When x-rays are employed with proper judgment for the relief of pruritus of the anal region there should be no danger of untoward effects of any kind. A series of four weekly treatments of 90 roentgens each most certainly will not cause radiodermatitis or lead to sequelae such as atrophy, telangiectasia or keratoses. This amount will produce relief in many instances. If not, the treatment should not be continued because, when four such treatments fail to effect the desired result, additional roentgen treatment is also likely to fail. When relief is obtained, such relief may be permanent or temporary. When the remission lasts many months a recurrence is often relieved by a second series of three or four roentgen exposures of approximately 90 roentgens each. Immediate recurrence or repeated recurrences, or recalcitrant cases are unsuitable for roentgen therapy. In such instances persistent roentgen treatment may lead to injury of the local tissue. There is some clinical evidence to support the belief that injudicious roentgen therapy may cause the disorder to become more refractory, even though the amount administered was too small to injure the tissues detectably. On the other hand there is no definite proof that such cases might not have been equally resistant without roentgen treatment. Irritating topical remedies should be avoided during the administration of even the small doses of x-rays mentioned. The mechanism by which radiation causes relief in favorable cases of so-called essential pruritus ani is not well understood. The action may be physical or psychic or both.

Pruritus ani has, apparently, a variety of possible causes. The itching may be due to a recognizable dermatosis. In the so-called essential cases the pruritus may be evoked possibly by some rectal or intestinal abnormality, diabetes or a psychic disturbance. Certainly one should investigate for the cause and when found an attempt should be made to eradicate it. Roentgen treatment is simply one of a number of therapeutic measures that may be employed in an attempt to obtain relief from itching that at times is distressing and not infrequently for which no definite cause can be discovered.

CHRONIC CARBUNCLES

To the Editor:—A man, aged 34, came to me three months ago complaining of several red, swollen and painful areas on each thigh. These proved to be carbuncles and were incised and drained. New carbuncles, however would appear as the older ones healed. This condition prompted a complete examination. The past history revealed nothing of note, the patient having always been healthy. He is a clerk in a haberdashery. The physical examination is entirely negative: the tonsils are out, and a recent roentgen examination shows that the teeth are in good condition. There is a slight sensitiveness to palpation in the right lower quadrant of the abdomen. Repeated complete urinalyses are negative. Kahn and Wassermann reactions on the blood are negative. February 5 a blood count showed hemoglobin 92 per cent, red blood cells 4,970,000, white blood cells 7,800, polymorphonuclears 75 per cent, lymphocytes 24 per cent and mononuclears 1 per cent. A smear from one of the carbuncles showed staphylococci. After several weeks of treatment by incising and draining, ultraviolet rays, local application of bacteriophage, oral administration of tonics, a diet rich in vitamins and nourishing foods, and plenty of fresh air, the patient improved and the carbuncles disappeared. Stannoxyl (a combination of metallic tin and its oxide) was prescribed also, but its value is questioned. After a quiescent period of six weeks the carbuncles have reappeared and are now on both the lower and upper extremities. In general, I am using the same line of treatment, but the condition of the patient does not improve. Your advice and suggestions regarding the treatment of this case would be greatly appreciated. Please omit name.

M.D., Michigan.

ANSWER.—Carbuncles are usually large and single. Small ones sometimes occur in series as described in this case, but unless deep infiltration and multiple openings exuding pus develop this classification should not be employed. Syphilis may be suspected, in spite of the negative reactions. Series of gummas are sometimes seen, a number of them developing into large abscesses; but they do not cause much pain. A therapeutic test with mercury and iodides for two weeks should show decided improvement if the condition is of syphilitic origin.

Assuming that the staphylococci found are the guilty factors, the problem of stimulating resistance to them is sometimes a difficult one. Local foci of infection should be eliminated if possible. In the case in question nothing is said of the nose and nasal sinuses. The possibility of a chronic appendicitis is suggested. A careful search should be made for such foci of infection.

In addition to examinations of the urine for sugar, the blood sugar and sugar tolerance should be investigated and appropriate treatment given if they are not normal. Tauber (*Arch. Dermat. & Syph.* **27**:198, 1933) reported good results from increase of sugar in the diet and intravenous injections of dextrose in a series of cases in which the blood sugar was normal or subnormal.

Autogenous vaccines should be used. There is serious doubt of the specific action of vaccines in these cases. They may act merely as a mild form of foreign protein therapy. The endermic injection of toxins made by the Besredka method may be tried. Other forms of foreign protein therapy, such as sterile milk, iodized casein, even intravenous injection of typhoid vaccine sufficient to cause a febrile reaction, may be justified.

An ounce of fresh yeast in a little seltzer water a half hour before each meal is a time-honored remedy.

Finally, a long rest and outdoor life with change of scene are recommended.

INDUSTRIAL HAZARD FROM ALUMINUM PAINT

To the Editor:—May I have any information that is available relative to the danger to health that may result from working with so called aluminum paint. What are the symptoms and measures for combating it.

M.D., Nebraska.

ANSWER.—Metallic aluminum dust is comparatively harmless. Its deposition along the respiratory tract may induce minor irritation, possibly lymphatic blocking within the lungs, and in time an increased amount of noncharacteristic fibrosis. A few instances have arisen in which claims have been made that lead as an impurity in this type of metallic paints has

caused lead poisoning. It is not known that any such cases have been proved decisively. The vehicle in which the metallic aluminum is suspended is likely to be a mixture of various acetates and higher alcohols. Such substances lead to low grade irritation to the eyes, respiratory tract, and the skin. Various painters are known to dilute aluminum paint with such substances as turpentine, leptyne, and various petroleum derivatives. This possibly is technically undesirable in that discoloration of the aluminum may arise. Whenever such dubious and uncontrollable practices are carried out, naturally some additional hazards may arise.

BLOOD FLOW THROUGH KIDNEY

To the Editor:—I would appreciate any information you can give me on the methods for determining the volume of blood flowing through the kidney per minute. I am particularly anxious to know whether there is a method that has as its base the systemic blood pressure. Please omit name.

M.D., Alabama.

ANSWER.—We presume that the inquirer has in mind the determination of the rate of blood flow through the kidney of man. There is no method that will permit such a study. The study of rate of blood flow passing through the kidneys of experimental animals, while the rate of urine formation is being studied simultaneously, is an old and well established one. It consists in enclosing the kidney in a suitably constructed plethysmograph (called an oncometer), which in turn is connected by rubber tubing to a delicate recording manometer or piston recorder. Even under laboratory conditions in which the oncometer is used a study of the blood pressure gives no idea of the rate of blood flow through the kidney, since changes in the blood flow through the kidney can occur without a change in the general arterial blood pressure; conversely, the blood flow through the kidney may vary little, if at all, with an increase or decrease in the blood pressure. A schematic account of the use of the oncometer will be given on request.

HAZARDS TO HEALTH IN WELDING INDUSTRY

To the Editor:—A man, seen at 4:30 p. m., complained of coughing, dyspnea and nausea. The temperature was 100 F., the pulse 96, and the respiration rate 26. Moist râles could be heard scattered through both lungs. The patient had a persistent cough, and was expectorating a mucopurulent material with a greenish color. He stated that he began welding galvanized iron in an unventilated room at about 12 o'clock. He was using an acetylene torch. About 3 o'clock he was having very marked difficulty in breathing, felt nauseated, and was coughing almost constantly. A fellow workman opened a window and fanned him, after which he was removed to his home and a physician was called. The following day the patient's temperature was 99.6 F. in the morning but dropped to normal and remained so thereafter. The respiration rate and pulse were normal. Examination of the blood showed a total white count of 14,500, with 85 per cent polymorphonuclear leukocytes and 15 per cent lymphocytes. Urinalysis was negative except for plus 1 albumin and the presence of acetone. The patient was still complaining of some dyspnea, and an occasional moist râle could be heard through both lungs. On the second day the temperature, pulse and respiration rate were normal and the patient felt well. This case would have been diagnosed influenza without question had the patient not been exposed to the fumes described. Could this condition have resulted from the inhalation of such fumes? Please omit name.

M.D., Virginia.

ANSWER.—This entire condition might have resulted from the inhalation of welding vapors, but an associated and antecedent infection of the respiratory tract undoubtedly contributed to the condition. The extent to which occupational factors may have influence is now indicated. In burning the galvanized coating off the iron, zinc fumes are produced. Inhaled zinc fumes readily bring about an acute condition representing one form of "metal fume fever." In doing this work with an acetylene torch it is possible that hydrogen arsenide (arsine) may have been present as an impurity in the acetylene. This is not very probable. If present, this toxic agent would have caused general malaise, difficulty in breathing, vertigo, gastro-intestinal disturbances and nephritis, among other ailments. Also, the remote possibility exists that hydrogen phosphide (phosphine) might exist in the acetylene as an impurity. This substance in a mild case would occasion about the same manifestations as those attributed to hydrogen arsenide.

Respiratory disorders among welders are quite common. The fumes to which they are exposed, while not invariably leading to characteristic occupational diseases, so irritate the respiratory tract as to promote or accelerate ordinary bacterial invasions. It is quite within reason to attribute the case described in the query chiefly to bacterial action but to recognize that it probably was set in motion and aggravated by the well known injurious fumes arising from welding work and particularly from welding work on galvanized surfaces.

CEREBROSPINAL SYPHILIS

To the Editor:—I have a patient, a man, aged 45, who shows a four plus Wassermann reaction, although treated with full courses of arsenic, mercury and bismuth compounds and the iodides. The lesion was localized as a meningeal syphilis, the chief sign being a unilateral ptosis of the eyelid. Under treatment the ptosis disappeared and the patient's general health is much improved. The initial treatment was given four years ago. Would you advise fever therapy, malaria or vaccine? The general constitutional condition is good.

H. H. WRIGHT, M.D., Keene, Ont.

ANSWER.—It would seem that the major criterion of the patient's condition as regards the nervous system, for which fever treatment has the most favorable results, would be indicated by the condition of the cerebrospinal fluid. It would be wise, therefore, to do a lumbar puncture. If the spinal fluid is normal and the patient is free from symptoms, there would seem to be relatively little reason for fever therapy. If, on the other hand, the cerebrospinal fluid is positive, in spite of the amount of treatment that he has had, it would then be wise to give either malaria or some treatment with tryparsamide, if malaria is not chosen. In the absence of central nervous system activity, it is questionable how much either tryparsamide or fever will do in changing the blood Wassermann reaction.

INTERPRETATION OF KAHN TEST

To the Editor:—A man, aged 37, contracted syphilis in 1927. During the next three years he received infrequent treatment. In 1930 his blood Wassermann reaction was 4+ positive. For the next two years he received regular treatment, consisting of courses of arsphenamine followed by compounds of bismuth and mercury with rest periods. In February 1933 the blood and spinal fluid Wassermann reactions were negative. He has received no treatment since, but blood Wassermann tests have been made every three months. The last report was Wassermann negative, Kahn 3 plus positive; the test was repeated with the same result. Does this indicate a relapse and should the patient receive further treatment? His physical examination is otherwise negative. Please omit name.

M.D., Ohio.

ANSWER.—The positive Kahn reaction does not necessarily indicate a relapse. It may be that, if a Kahn test had been made in February 1933, the result would have been positive also at that time. The Kahn test, being more sensitive than many Wassermann technics, is often positive in treated cases that give negative Wassermann reactions. But these negative reactions, after months or years, often become positive again. Further treatment appears to be indicated, although this step must necessarily be a matter for decision by the physician who knows the physical status of the patient.

EFFECT OF CONSTITUTION, DIET AND INTERNAL SECRETIONS ON DEVELOPMENT OF TEETH

To the Editor:—Can you tell me where I can obtain information about preventive work in tooth development with regard to the position of the teeth? There is a great deal written about tooth straightening in orthodontic literature, but little about etiology or correction. I feel that a pediatrician would be able to prevent a great deal of the orthodontic work that is now necessary if he had the knowledge. Dr. Corman O. Edwards of Oakland, Calif., furnishes a device that may be attached to the bottle for treatment of micrognathia, and results with this were described in the *American Journal of Diseases of Children.* This seems to me to be a step in the right direction, and I should like more information on the same subject.

G. L. Johnson, M.D., Englewood, N. J.

ANSWER.—No doubt ultimately the pediatrician will play a very important part in the prevention of irregularities of the teeth. This, however, will not be possible until the internist establishes quite definitely what part diet, heredity and endocrine secretions play in the general metabolism and particularly in the development of the skeletal system. Dietary deficiency diseases are certainly important factors in the causation of irregularities of the teeth. But even when there is present a well balanced diet as it is understood today, irregularities develop. This suggests the conclusion either that diet does not control everything in the development or that diet is not yet fully understood.

Dr. Hugo R. Rony of the Northwestern University Medical School recently read a paper before the Chicago Dental Society on endocrine disturbances and their effects on the development of the system. This paper, which will soon be published in the *American Dental Journal,* is a report of extremely unusual experimental work that is being done now. With reference to nutrition and endocrine secretions, he states: "In the first place the growing organism must be supplied with all the necessary food factors both in amount and quality; enough proteins, fats, carbohydrates and minerals must be available not only for actual consumption but also for deposition into the growing tissues. Furthermore, certain vitamins must be taken in sufficient amounts. Also, the tissues must be in a healthy condition; congenital or acquired disturbances of the gastro-intestinal tract

or of the blood circulation, etc., infectious diseases with toxemia, etc., will injure the growing tissues and inhibit their growth. These conditions being adequate, growth is controlled largely by the endocrine system."

The endocrine glands that exert the greatest influence on growth and development are the pituitary, thyroid, sex and parathyroid glands. In summarizing, Dr. Rony states: "It appears that the anterior lobe of the hypophysis controls directly . . . by the growth hormone . . . or indirectly . . . by the thyrotropic and sex hormones . . . practically all growth phenomena in the developmental period of life."

Thus, from the information available to date, it appears that hereditary influence and endocrine secretions play by far the more important rôle in the development of the normal individual. Diet and local disturbances as causes of irregularities have been overestimated in their importance. But until further work is done and the relative importance of each factor is quite well established, it will not be possible basically to change the treatment from the present orthodontic one.

CUPS TO REPLACE PADS FOR MENSTRUATION

To the Editor:—1. The enclosed material about the Saniway Cup was turned over to me by one of our nurses for comment and I must say that I am unfavorably impressed by it. I should appreciate your reactions to this sort of thing. It seemed to me extremely undesirable to use such a contraption as well as entirely unnecessary. 2. May I have your opinion relative to the use of Hy-Kup described in the enclosed circular.

ELIZABETH C. UNDERHILL, M.D., South Hadley, Mass.

ANSWER.—1. Some patients have said after about six months' use that these cups are less troublesome and more satisfactory than vulvar pads. They cannot be used in virgins, because an intact hymen will not permit the admission of such cups. They most likely will not remain in place in women with pronounced cystoceles and rectoceles, and they will not be suitable for women who have a profuse flow of blood with clots unless the cup is emptied frequently. The cup may be used to good advantage by such women as professional dancers or swimmers, provided, of course, the hymen has been broken.

2. Instruments that act as a vaginal plug must inevitably retain at least part of the menstrual blood. They are likely to be insanitary and would predispose to infection.

POSTOPERATIVE IRRADIATION OF CARCINOMA OF BREAST

To the Editor:—Please furnish me with the technic for postoperative irradiation of carcinoma of the breast. In this particular case there are a few nodes in the axilla and several small recurrences in the old scar. Please omit name.

M.D., South Dakota.

ANSWER.—The technic for postoperative irradiation of carcinoma of the breast varies markedly in the hands of different radiologists. It also varies depending on whether radiation is administered prophylactically or in the presence of disease. In the particular case mentioned, the technic depends on the extent to which the disease is disseminated. A localized recurrent nodule or group of nodules is treated most effectively by the insertion of removable platinum radium needles. When the recurrences are more extensive and more widespread, external irradiation with x-rays or radium is most efficacious. The external irradiation is frequently combined with interstitial irradiation with considerable advantage. The technic of irradiation is dependent on so many different factors that it is quite impossible to generalize and it is necessary to determine a plan of irradiation for each individual case.

CATARACT OPERATION IN EXOPHTHALMIC EYE

To the Editor:—Does an exophthalmic eye possess any additional surgical problems when an operation for senile cataract is necessary? Please omit name.

M.D., Michigan.

ANSWER.—If a high degree of exophthalmos is present, it is somewhat more difficult than usual to sterilize the conjunctival sac adequately before operation. There is also the added danger of pressure by the lids on the eyeball. This should be combated by an external canthotomy immediately before the Graefe incision. Sutures are used, either corneal (Liegard) or conjunctival, in order to prevent subsequent gaping of the corneal wound. Again, owing to the protrusion of the eyeball, there may be a light lagophthalmos; this must be determined before operation and, if possible, the lids must be closed by sutures, which are put into position before the operation on the eyeball is started. It stands to reason that, if the exophthalmos is due to hyperthyroidism, the operation should be performed during a remission of the toxic condition. In other respects the lens may be extracted exactly as in a normal eye.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Sept. 8. *Application must be filed sixty days prior to date of examination.* Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written (Group B candidates).* The examination will be held in various cities of the United States and Canada, Nov. 3. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

CALIFORNIA: Los Angeles, July 23-26. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Endorsement.* Hartford, July 24. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates, Sept. 12-14. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEVADA: *Reciprocity.* Carson City, Aug. 6. Sec., Dr. Edward E. Hamer, Carson City.

SOUTH DAKOTA: Rapid City, July 17-18. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

WASHINGTON: *Basic Science.* Seattle, July 16-17. *Medical.* Seattle, July 19-21. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

Arizona April Examination

Dr. J. H. Patterson, secretary, Arizona State Board of Medical Examiners, reports the written and oral examination held in Phoenix, April 3-4, 1934. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. One candidate was examined and passed. Three physicians were licensed by reciprocity and one physician was licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.
Rush Medical College		(1933)

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1917)	California
University of Illinois College of Medicine		(1929)*	California
University of North Carolina School of Medicine		(1903)	N. Carolina

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Harvard University Medical School		(1928)	N. B. M. Ex.

* Granted temporary permit. License will be issued when basic science examination is completed.

Wisconsin Reciprocity Report

Dr. Robert E. Flynn, secretary, Wisconsin State Board of Medical Examiners, reports 5 physicians licensed by reciprocity at the meeting held in Milwaukee, April 5, 1934. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
General Medical College, Chicago		(1923)	Illinois
University of Illinois College of Medicine		(1931)	Mississippi
Hahnemann Med. Coll. and Hospital of Philadelphia		(1900)	Illinois
University of Pennsylvania School of Medicine		(1931)	Penna.
Woman's Medical College of Pennsylvania		(1899)	Penna.

California February-March Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the written examination held in Los Angeles, Feb. 27-March 1, 1934. The examination covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Sixty-four candidates were examined, 56 of whom passed and 8 failed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
University of Arkansas School of Medicine		(1933)	84.1
College of Medical Evangelists		(1933)	84, 84.3, 86.6, 86.9, 88.3, (1934) 84.7
University of California Medical School		(1932)	87.4, (1933) 86.4
University of Colorado School of Medicine		(1933)	82.9
George Washington University School of Medicine		(1933)	86.1, 86.6, 87.8
Northwestern University Medical School		(1932)	86.9, 91.6, (1934) 88.4
Rush Medical College		(1933)	84.2, 88.6
University of Illinois College of Medicine		(1933)	89.7, (1934) 80.3
Indiana University School of Medicine		(1931)	82
State University of Iowa College of Medicine		(1933)	81.8, 83
University of Kansas School of Medicine		(1933)	86.4
University of Michigan Medical School		(1932)	86.3

University of Minnesota Medical School.....(1933) 87.9,* 91.2
Washington University School of Medicine.....(1933) 85.9, 87.6, 88.8
Creighton University School of Medicine..(1932) 86.4, (1933) 78.4
University of Nebraska College of Medicine.....(1933) 81
Columbia Univ. College of Physicians and Surgeons...(1933) 89.4
Cornell University Medical College.....(1933) 88.7
Ohio State University College of Medicine.....(1933) 87.1
University of Cincinnati College of Medicine.....(1933) 86.2
University of Oregon Medical School.....(1933) 83.6, 84.6, 85.1, 85.4, 89.6, 90.1
Jefferson Medical College of Philadelphia.....(1933) 90.2
Temple University School of Medicine.....(1932) 85.4
Medical College of the State of South Carolina.....(1933) 86.9
Meharry Medical College.....(1932) 85.3
Marquette University School of Medicine.....(1933) 87.1
University of Wisconsin Medical School.....(1933) 85.1
University of Toronto Faculty of Medicine.....(1906) 80.1
McGill University Faculty of Medicine....(1932) 82, (1933) 85, 88
Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, Germany.....(1924) 81.7,† (1925) 82.4†
Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany.....(1926) 76.3†

FAILED

School	Year Grad.	Per Cent
American Medical Missionary College, Chicago	(1902)	63
Bennett Medical College, Chicago	(1915)	65.3
University of Illinois College of Medicine	(1931)	71.6
Hahnemann Med. College and Hospital of Philadelphia	(1902)	57.2
Université de Strasbourg Faculté de Médecine	(1900)	57.8†
Johann Wolfgang Goethe-Universität Med. Fakultät, Frankfurt-am-Main, Prussia, Germany	(1926) 52.9,† (1927)	69.4†
University of Santo Tomas College of Medicine	(1924)	68.6

* This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.

† Verification of graduation in process.

Book Notices

Rose and Carless' Manual of Surgery. Fourteenth edition revised by Cecil P. G. Wakeley, D.Sc., F.R.C.S., F.R.S., Surgeon, King's College Hospital, and John B. Hunter, M.C., M. Chir., F.R.C.S., Surgeon, King's College Hospital. American (fourteenth) edition edited by W. T. Coughlin, B.S., M.D., F.A.C.S., Professor of Surgery and Director of the Department of Surgery, St. Louis University School of Medicine. Cloth. Price, $9. Pp. 1468, with 676 illustrations. Baltimore: William Wood & Company, 1933.

Beginning with its first edition, which appeared in 1898, the Rose and Carless manual has justly been considered as a standard textbook on surgery. Its popularity with teachers and students is attested by the fact that it has passed through thirteen editions. Because of certain differences in the curriculums here and in England, the present edition has been especially revised and rearranged. The general aim has been to present to the student the principles and science of surgery rather than its practice and art. Because of recent advances, some of the chapters had to be entirely rewritten and much new material had to be added. The chapter on thoracic surgery is entirely new, the subject of fractures is enlarged by the inclusion of Böhler's method of treatment, the newer methods of roentgenologic study of the urinary tract were added. The curtailment of chapters on bacteriology, immunity and inflammation is an advantage, as these subjects are more properly treated elsewhere in the curriculum. The publishers are to be congratulated on the appearance of the new volume, which is a great advance on the preceding edition. This was accomplished by printing it on a highly surfaced paper with a resulting clearer print and illustrations. From a pedagogic point of view the volume is abreast of the times, and the subject matter is logically arranged and ably presented. It will undoubtedly continue to be one of the standard textbooks on surgery.

Zur Kenntnis der Hirnveränderungen bei der normalen Altersinvolution. Von Nils Gellerstedt, Med. Lic. Inaugural Dissertation zur Erlangung der medizinischen Doktorwürde. Upsala. Aus Upsala Läkareförenings Förhandlingar, N. F., Band XXXVIII, Häft 5-6. Paper. Pp. 408, with 71 illustrations. Uppsala: Almqvist & Wiksells Boktryckeri a. B., 1933.

Neurofibrillary cell changes with formation of so-called senile plaques ("drusen"), accumulation of catabolic products in the ganglion cells, changes in the myelin nerve fibers and other less striking phenomena are considered typical of involutional insanities (senile and presenile). The specificity of such changes may be questioned, since Gellerstedt was able to demonstrate similar changes in what may be called normal senility. He came to such a conclusion after a careful microscopic study of the brains of fifty persons of the average age of 65 and contrasted the resulting observations with those from similar studies in "pathologic" senility and young individuals who had died from somatic disorders, accidents or some psychic disorders. The facts obtained were carefully tabulated, subjected to a critical study and richly illustrated by photomicrographs and colored drawings. The book gives an excellent review of the condition of the central nervous system in old age, but in some of his views the author was evidently too greatly influenced by German neuropathologists. For instance, the author is of the opinion that the brain changes in senile states are for the most part of vascular origin, the result of arteriocapillary fibrosis, which secondarily causes parenchymatous and other types of lesions—a view that is hardly acceptable.

Our Mysterious Life Glands and How They Affect Us: A Popular Treatise on Our Glands and Their Secretions—What They Do to Us, How They Affect Our Health, Growth, Appearance, Temper, Mentality and Character, Including the Vitamins. By William J. Robinson, Ph.G., M.D., Consultant to the Department of Genito-Urinary Diseases and Dermatology, Bronx Hospital. Cloth. Price, $2.50. Pp. 291, with illustrations. New York: Eugenics Publishing Company, Inc., 1934.

The physician who undertakes to reduce a scientific subject to a form for popular consumption by lay readers encounters a great deal of difficulty. By adhering strictly to his science he risks the loss of popularity, and if he strives for the popularity his science suffers. In his new book, Robinson turns a versatile pen to a profound subject with the purpose of bringing lay readers down to the present. "Our Mysterious Life Glands" is not so mysterious in the relating as in the announcing. The physiology of these organs is told in a stereotyped way and their dysfunctions are sketchily related. The sex glands naturally come in for more detailed exposition and there is a wealth of descriptive matter draped around the gonads; for instance, homosexuality, sterility, impotence and the present status of rejuvenation. The author is severely critical of those who have ventured into the speculative field of the relation of the glands to personality. Plainly he does not believe in such adventuring. He thinks it is not scientific, and this may be true. It diverts the mind of the lay readers from the parts in which they are naturally interested and causes more or less mental confusion. The dangers are recited with much display of the first person singular. The author does not believe, for instance, that the endocrine glands, although their potency is admitted, can ever make a wise man out of a fool, but he ignores the reciprocal that the glands have not infrequently made fools out of wise men.

Lehrbuch der operativen Geburtshilfe für Ärzte und Studierende. Von Prof. Dr. Georg Winter und Prof. Dr. Josef Halban, Vorstand der Gyn. Abt. des Krankenhauses Wieden in Wien. Unter Mitwirkung von Prof. Dr. W. Benthin und Prof. Dr. H. Naujoks. Second edition. Paper. Price, 40 marks. Pp. 556, with 294 illustrations. Berlin & Vienna: Urban & Schwarzenberg, 1934.

In the preparation of the present edition the services of Halban were enlisted, and this able obstetrician and gynecologist has made many valuable contributions to the book. The number of pages has been increased and fifty-four illustrations have been added. As was mentioned in the review of the first edition (THE JOURNAL, Jan. 28, 1928, p. 316), the book is an enlargement of the chapter on the same subject written by Winter for Halban and Seitz's monumental Biologie und Pathologie des Weibes. In the first part of the book there is a discussion on general technic, including asepsis and antisepsis, the preparation of the patient and physician, anesthesia and instruments. Operations are divided into those performed during pregnancy, during labor and during the puerperium. There is also a chapter on the management of injuries, fetal as well as maternal. The names of the authors are a sufficient guaranty that the contents are readable and instructive, because both men have had as extensive an experience in obstetrics as any authorities in the world. The illustrations are abundant and instructive but in a large number operations are pictured performed with ungloved hands. A disproportionately large number of illustrations (32 out of a total of 282) are devoted to destructive operations on the child. All forms of cesarean section are described, but the transperitoneal operation is the one of choice. The use of the Kielland forceps is described and illustrated in detail. Unlike American publishers, the German and Austrian publishers issue books both bound and

unbound. The latter are usually held together by a paper cover. The copy reviewed was so poorly glued that it fell apart during the first few minutes the book was being read. The difference in cost between the bound and the unbound book is 3 marks and, based on the total cost, 43 marks, is small compared to the discomfort of trying to read and keep permanently a mass of loose pages. Furthermore, the price of the book is too high. However, for those willing to be extravagant the book is decidedly worth while owning.

Your Germs and Mine: The Story of Good and Bad Microbes. By Berl ben Meÿr. Cloth. Price, $2.75. Pp. 389, with 34 illustrations. Garden City: Doubleday, Doran & Company, Inc., 1934.

The book is broader in scope than its title promises. It deals primarily with germs, but only as a starting point for an excellent discussion of personal and community hygiene as these concern themselves with communicable diseases. A good discussion of useful germs is the principal feature of the book. The chapters on milk and water are exceptionally clear and comprehensive. The discussion of immunology is refreshingly conservative as regards some of the immunizing procedures that are of more or less doubtful value. The author has been able to infuse human interest into his style without sacrificing accuracy and to speak his mind plainly about some of the modern shortcomings of individuals and communities with respect to health without at the same time becoming sensational. He might profitably have enlarged on the subject of ringworm, instead of hooking a sentence or two about it on a chapter where it does not logically belong and then leaving the reader up in the air as he turns the page to find a new chapter heading and nothing much about ringworm except that it is sometimes confused with the ground itch of hookworm infestation. This book should make excellent supplementary reading for high school or college students for whom a general knowledge of bacteriology is desired but for whom no great amount of technical detail is necessary. It would also give any citizen an excellent idea of the reason for having a health department in a city and also why it is important to have, not a health department in name only, but one in fact. Other authors might have chosen somewhat differently in deciding on what diseases to treat at length and what to touch on briefly in the "omnibus chapter," but that is and must remain a matter of opinion. The book is well made, adequately illustrated and well indexed.

Schlafmittelmissbrauch. Von Dr. Kurt Pohlisch, Privatdozent an der Universität Berlin, und Dr. Friedrich Panse, Oberarzt an den Wittenauer Heilstätten. Boards. Price, 9.60 marks. Pp. 170, with 2 illustrations. Leipzig: Georg Thieme, 1934.

The abuse of hypnotics in Germany has grown tremendously in recent years and is increasing. Among hospital patients in Berlin, chronic intoxication from hypnotics almost equals that from chronic alcoholism. The authors speak mainly of their own cases and of cases from the German literature. Relatively few cases from foreign literature have been included. Their study is important, because the drugs studied have a wide use also in America. They divide their investigation into a study of single excessive dosage from 1925 to 1932, and chronic intoxication or habituation, mainly from 1903 to 1932. The first group almost exclusively comprises cases of attempted suicide. In the second group the abuse of the drugs had lasted one or more years, usually with marked psychic effects. In both groups the results of the hypnotic studied are given in statistical form for each year and summarized for the total period. The age of habitués varied from 15 to 75, but by far the greater number were between the ages of 20 and 50 years and about 70 per cent of these were psychopathic cases. A study of the symptom complex of single dose abuse of the various hypnotics in relation to their chemical constitution is based on 707 cases of intoxication. The authors discuss all the well known and a number of relatively new preparations, such as evipan. Under the habitual use of large doses they omit chloral hydrate, paraldehyde, amylene hydrate and the sulphur-containing hypnotics, because they discussed these in 1928. They discuss the use of veronal, luminal, phanodorm, somnifen, dial, allonal, veramon, the adalin group, bromural, and combinations of two or more of these with other preparations. Many clinical cases with histories and symptoms are cited.

The authors discuss the genesis and development of the chronic abuse of hypnotics, using statistical, psychologic and clinical-pathologic methods. Their main conclusions are that: 1. Neurosis is an important genetic factor, as is also alcoholism and morphinism. However, the psychically robust may also be victims. 2. All hypnotics are habit forming, and their habitual use demands an increasing dosage. 3. Habitués may take hypnotics day after day without sleep development. 4. Instead of sleep, symptoms may develop which vary in different persons, also with different preparations somewhat as follows —agreeable fatigue, lazy euphoria, sleepy indifference, pleasant sleepy stupor, and occasionally, especially with phanodorm, drunken-like cheerfulness. 5. From continued use there gradually develops a clinical picture that resembles the psychic condition of chronic alcoholism.

The authors finish with advice on the prevention of the abuse of hypnotics which is universally applicable. Patients that most need these drugs are the type most likely to misuse them. Consequently physicians should bear this in mind when they prescribe hypnotics. Again, the prescription should be limited to about five doses. Original packages and prescriptions that contain more than this number may lead to habit formation. They point out that with the increase in the number of hypnotics on the market there is a corresponding increase in habitués. There are too many hypnotics available. The book presents a strong argument against self medication and against the promiscuous advertising of a valuable but dangerous group of drugs. The results of this important study should be available to the public as well as to the physician.

Handbuch der experimentellen Pharmakologie. Herausgegeben von A. Heffter. Fortgeführt von W. Heubner, Professor der Pharmakologie an der Universität Berlin. Band III, Teil 2: Allgemeines zur Pharmakologie der Metalle, Eisen, Mangan, Kobalt, Nickel. Paper. Price, 96 marks. Pp. 621-1502, with 66 illustrations. Berlin: Julius Springer, 1934.

The completion of another section of this monumental work on experimental pharmacology is a notable event of world-wide significance and it will be particularly welcomed by those to whom the Handbuch has become an indispensable basis and guide in their work. It may seem still more notable to the uninitiated that it requires almost 900 closely printed pages to do justice to the pharmacology of the "iron group," which includes merely the four metals iron, manganese, cobalt and nickel; and, of course, the discussion of iron occupies over two thirds of the book, or 600 pages. Likewise welcome is the announcement that the other two sections of the third volume will soon be ready for publication; and, last but not least, that the index, the lack of which greatly lessened their value to the possessors of the previous volumes of the series, is in active preparation. To cull from the mass of facts presented by the book only a few of general interest, it may be noted that iron plays the important part in life processes that it does, not because it is abundant in the earth's crust—silicon and aluminum are much more important quantitatively—but because of the following combination of properties, which no other metal displays: (1) water solubility, (2) possibility of formation of colloidal protein compounds without denaturing of either the protein or the iron, (3) ease of oxidation from bivalent to trivalent iron, (4) ease of reduction from trivalent to bivalent iron, and (5) the difference in the pharmacologic action of these two oxidation stages, of which the one is the inactive passage form while the other makes the life processes of the cells possible. The ferrous salts, like all bivalent metals, have little affinity for anions, they are rather poorly hydrolyzed and they have but little tendency to the formation of complexes. The ferric salts are strongly hydrolyzed, are always acid because they unite with the hydroxyl ions of water, and have a tendency to the formation of complex compounds, many of which are colloidal. Ferric salts are protein precipitants, while ferrous salts are not; or, when they do precipitate, the combination is reversible, the protein not being denatured. It is only in its ferrous form, therefore, that iron is absorbable. Ferric salts must be reduced in the stomach to ferrous salts before they can be absorbed; and, because of limited stay in the stomach, only a small portion of the ferric salt is thus converted. Hence ferrous salts are absorbed to a much greater extent and are much more valuable as hematinics than the ferric salts.

The Road to Adolescence. By Joseph Garland, M.D., Physician to Children's Medical Department, Massachusetts General Hospital. Cloth. Price, $2.50. Pp. 293, with 11 illustrations. Cambridge: Harvard University Press, 1934.

This is a logical, sensible and sympathetic discussion of adolescence. The book contains a simple discussion of heredity, environment, growth and development, anatomy, care of the body, nutrition and diet, recognition and care of sickness, vaccines and serums, first aid, relationship of home, school and camp, special problems in education and, under the title "As the Twig is Bent," a philosophy of home life which every parent ought to read. The author emphasizes that the plasticity of children's minds is not the plasticity of inanimate material but of living tissue. Good reading is suggested, play and discipline are helpfully discussed, and so is sex instruction.

The book is exceptionally well written, as would be expected by any reader familiar with the author's previous work The Youngest of the Family. Among numerous books on health which pour from the presses of the publishers, this one stands out as a work of exceptional merit. Though it is written for parents, no mistake would be made by physicians, teachers, social workers and juvenile court officers in reading and digesting it.

Lehrbuch der inneren Medizin. Von G. v. Bergmann (mit F. Stroebe), R. Doerr, H. Eppinger und anderen. Band I und Band II. Second edition. Paper. Price, 45 marks. Pp. 914, with 144 illustrations; Pp. 794 with 146 illustrations. Berlin: Julius Springer, 1934.

That within the space of only three years a new edition of this two volume practice of medicine totaling about 1,700 pages should be required speaks for its well deserved popularity. This is not merely a reprint but is enlarged and has been partly rewritten. Thus, a chapter on the general and special pathology of the diaphragm by Hans Eppinger has been added, which even though short brings into clear view existing knowledge of diaphragmatic disease, mostly of recent origin and largely the result of roentgen investigation. While one cannot help feeling almost sorry for the medical student who must find his weary way through the intricate patterns laid down in this book—many of them in fine print—one also feels that when he has done so and has mastered its contents with German thoroughness he has achieved a complete and scientific understanding of the medicine of today.

The Professional Training of the Hospital Dietitian. By Helen Clarke, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 602. Cloth. Price, $1.50. Pp. 96. New York: Bureau of Publications, Teachers College, Columbia University, 1934.

This is the report of a survey and study of training for hospital dietitians as offered by schools of collegiate rank in 1931-1932. The survey included visits to twenty-five hospitals, and the report contains well compiled summaries of all types of instruction for dietitians in the United States. It also includes chapters on the hospital dietitian, the dietitian intern, college curriculum for hospital dietitians, and college subjects and trends in academic training. Appended is a well prepared list of colleges, universities and technical schools that give work for prospective dietitians, with information concerning each school. There is also an outline of courses approved by the American Dietetic Association and a list of courses approved for dietitian interns. The work of institutions was judged by curriculums suggested by the American Dietetic Association.

Mat i Ditya. Mother and Child. Paper. Price, 5 rubles. Pp. 30, with illustrations. Leningrad: All-Union Society for Cultural Relations with Foreign Countries Jointly with the Crèches Board of the Leningrad Public Health Department, 1933.

As an instrument of propaganda, this production is interesting. The large size of the pages, 12 by 17 inches, the profusion of photographs, which constitute, with their brief legends, the entire pamphlet, and the good quality of the photography indicate the practiced propagandist. It is hard to appreciate how any thinking person could be caught by such palpable bait. The elaborate preparations for the care of the expectant mother, for the parturient woman and for the puerperium, plus the mass production methods for the care of the infants, are stressed. Legalized abortion is portrayed. Nothing is said about the equivocal position of women in a society where divorce is as easy as saying good morning, or about the crowded living quarters, inadequate food and forced labor, for which the elaborate vacation homes would seem but sorry recompense. To the socialistically minded traveler in Russia, who gets his impressions from what officials say, in towns where he does not stay long enough to investigate conditions for himself, this pamphlet might be convincing. It is claimed on the closing page that "the position of women in Soviet Russia is at the present time such that it can be considered ideal (perfect) from the point of view of the most advanced countries."

Recent Advances in Vaccine and Serum Therapy. By Alexander Fleming, F.R.C.S., Professor of Bacteriology in the University of London, and G. F. Petrie, M.D., Bacteriologist-in-charge, Serum Department, Lister Institute, Elstree. Cloth. Price, $4. Pp. 463, with 5 illustrations. Philadelphia: P. Blakiston's Son & Company, Inc., 1934.

There has been a growing demand for an authoritive and concise treatise on the subject of vaccine and serum therapy, and this volume is a timely addition to the recent advances series. The book covers the general considerations on the production and use of serotherapy, the specific use in various diseases, including those due to filter-passing viruses, specific and nonspecific vaccine therapy and active immunization. While many critical readers will not be prepared to accept some of the statements in regard to the success of vaccine therapy in some diseases, the author of this section carefully distinguishes between clinical and experimental evidence. The book is well balanced in fundamental information and clinical application, and the reader will find it authoritive and clearly presented. It is recommended for both the student and the practitioner of medicine.

The Mammalian Red Cell and the Properties of Haemolytic Systems. By Eric Ponder. Volume VI, Protoplasma-Monographien. Herausgegeben von R. Chambers usw. Cloth. Price, 22.50 marks. Pp. 311, with 52 illustrations. Berlin: Gebrüder Borntraeger, 1934.

The author is well prepared to present this subject by virtue of his extensive researches. It is not a book of applied data, and such subjects as the chemistry of hemoglobin and its rôle in respiration, the clinical significance of changed permeability of the red cell, and other subjects have been purposely omitted. The treatment is entirely in an academic manner, and while this textbook contains valuable data its use will be almost confined to reference purposes. The book covers the number, dimensions, shape, structure, chemical composition and metabolism of the mammalian red cells. Permeability and the phenomenon of osmotic hemolysis and the properties of simple hemolytic systems are next discussed. Various forms of hemolysis are considered as well as the fundamental factors governing their behavior. There is an extensive and well selected bibliography for the reader who wishes to go beyond the confines of the book. The facts presented are critically assessed and clearly presented. A vast amount of material is excellently correlated and summarized. The chief value of the monograph will be as a work of reference, for which it should serve a valuable purpose.

Constructive Eugenics and Rational Marriage. By Morris Siegel, M.D. Cloth. Price, $2.50. Pp. 196, with 12 illustrations. Toronto: McClelland & Stewart, Ltd., 1934.

While one may sympathize with the earnest purpose of the author to improve the quality of the race and may agree with him in his basic hypothesis that a constructive program of eugenics is needed and that rational marriage is earnestly desired, one cannot share all his opinions. There is nothing essentially new in his proposal that there shall be more extensive study of family pedigrees. One may perhaps be pardoned for entertaining doubts as to the practical nature of his suggestions for constructive eugenics. He seems to desire a return to the nineteenth century method of having prospective mates chosen by the parents of the young couple and believes that such arranged marriages are more selective and rational than those which are entrusted to the young people themselves. The value of a federal or, in Canada, a dominion, eugenic bureau may well be doubted, though in theory it looks like a means of getting a start on a universal study of family

pedigrees. The book offers little or nothing that is new, and the subject has been covered so much better in other works that the addition of this book to a health library would not seem to be a necessity.

Contribución al estudio anátomo-clínico del cáncer del pulmón: comienzo clínico por una ósteo-artropatía hipertrofiante pnéumica. Por el Dr. Pedro A. Castillo, profesor de clínica medica. Trabajo de la Catedra de Clínica Medica. Publicado en la revista "Vida nueva" en los numeros de abril y mayo de 1933. Paper. Pp. 247, with 89 illustrations. Havana, [n. d.].

This monograph, based on seven personal cases, is a study of the clinical manifestations and pathologic observations. The author emphasizes the fact that symptoms are often late, are varied, and include those of toxic absorption. His careful study of his own material makes this a worthy contribution to the subject of carcinoma of the lung, which is attracting increasing attention by its apparent marked increase in incidence.

Medicolegal

Malpractice: Sloughing of Tissue Following Subcutaneous Injection of Dextrose Solution.—The plaintiff, a woman approximately 65 years of age, was operated on by Dr. Ward, July 27, 1928, for appendicitis. The operation revealed that the appendix had ruptured and that the plaintiff was "in the last throes of peritonitis." Following the operation, in order to save the life of the patient, a saline solution containing 10 per cent dextrose was injected into the patient's thighs. Owing to the toxic condition of the plaintiff, the intravenous method of injection could not be used, it was concluded, since her circulation was failing and since such injections would overload "the already poisoned heart." Following the injections, there was a sloughing of the tissues at the places where the injections were made. Thereupon the plaintiff sued the Hahnemann Hospital, the extern at the hospital who administered the injections, a nurse who assisted him with the injections, Dr. Ward, and Dr. McGavack, the attending physician who administered the anesthetic. A non-suit was granted as to the nurse. The jury rendered a verdict for the hospital and the extern but gave judgment against Drs. McGavack and Ward, who thereupon appealed to the district court of appeals, first district, division 2, California.

The main question before the court was whether the evidence was sufficient to sustain the verdict against the physicians. There was no evidence, said the court, that the diagnosis made by the physicians was not entirely correct. The paramount duty of the physicians under the circumstances was to endeavor to save the life of the patient. There was no evidence to challenge the judgment of the physicians in determining that an injection of a solution containing 10 per cent dextrose was essential to accomplish that purpose. There was no evidence to show that in the condition in which they found the plaintiff a 10 per cent solution could have been injected in the veins without defeating that purpose. Under these circumstances, said the court, it certainly was not malpractice to save the patient's life, even though this was accomplished by the subcutaneous injection of a solution containing a higher percentage of dextrose than is ordinarily so injected, and even though sloughing resulted at the point of injection. It is a matter of common knowledge, said the court, that the selection of a method of treatment is a matter of judgment and opinion on which members of the medical profession will often honestly differ. There was no suggestion that the defendant physicians did not possess the requisite skill nor that they did not exercise their best judgment. It was contended, however, that in the selection of the method of treatment the physicians were required to keep within "recognized and approved methods." No witness for the plaintiff, said the court, stated what were the recognized or approved methods for the treatment of the plaintiff's condition following the operation. On the other hand, several medical experts testified for the physicians that the method of treatment selected was the recognized and approved method of treatment for the condition existing. Even assuming, said the court, that the medical testimony offered by the plaintiff was in conflict with the opinions of the several medical experts called by the defendant-physicians, the case presented was one showing that the medical experts were at variance in their opinions. Under such circumstances, the court continued, the defendant-physicians could not be held liable if they acted within the reasonable limit of either opinion. In *Dahl* v. *Wagner*, 87 Wash. 492, 151 P. 1079, the court said:

> It has been the uniform holding of this court that where doctors of equal skill and learning, being in no way impeached or discredited, disagree in opinion upon a given state of facts, the courts cannot hold a defendant in a malpractice suit to the theory of the one to the exclusion of the other. . . . It is enough if the treatment employed "have the approval of at least a respectable minority of the medical profession who recognized it as a proper method of treatment."

To hold otherwise, said the California court, would confine physicians in their selection of methods to the use of those methods, if any, which have the universal approval of all the members of the profession. New or different methods, having the recognition and approval of a minority, including many of the most able practitioners, could never be employed without the risk of a charge of malpractice resulting therefrom. The progress of the medical profession should not be obstructed by placing such an unreasonable limitation on the selection of methods of treatment.

The judgment of the trial court was therefore reversed, with directions to enter judgment in favor of the physicians—*Callahan v. Hahnemann Hospital et al. (Calif.), 26 P. (2d) 506.*

Insanity: Criteria of Criminal Responsibility.—The appellant, Cole, was convicted of murder and appealed to the Supreme Court of Mississippi. He contended, among other things, that the trial court committed error in stating in the presence of the jury that:

> I hold as a matter of law that the only absolute defence of insanity known in the State of Mississippi is paranoia. That is just real, flat insanity, not temporary, so if you are pleading insanity, the only insanity I recognize is paranoia. That is real insanity, not just a lapse of memory, or just a sudden forgetting of anything; just real insanity, known as paranoia in the medical profession.

This statement of the trial court was erroneous, said the Supreme Court. The true test of a defendant's criminal responsibility is stated in *Grissom* v. *State*, 62 Miss. 167, as follows:

> The test with us in this class of cases is the capacity to distinguish between right and wrong, and we know no difference in this regard between total and partial insanity. If the disease goes to the extent of breaking down the distinction between a knowledge of right and wrong, it is immaterial whether the sufferer be totally or only partially insane on other subjects. Irreconcilable conflict in the language of the instruction is created by the insertion of the words, "if the accused killed the deceased with malice." There can be no such thing as malice without mental accountability, and this cannot coexist with an incapacity from mental disease to distinguish between right and wrong.

The judgment of the trial court was reversed and the case remanded.—*Cole v. State (Miss.), 150 So. 757.*

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, August 20-22. Dr. Louis J. Mitchell, 21 East Van Buren Street, Chicago, Secretary.

American Public Health Association, Pasadena, Calif., Sept. 3-6. Dr. Kendall Emerson, 50 West 50th Street, New York, Executive Secretary.

Idaho State Medical Association, Lewiston, Sept. 7-8. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Minnesota State Medical Association, Duluth, July 16-18. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

National Medical Association, Nashville, Tenn., August 13-18. Dr. C. A. Lanon, 431 Green Street, South Brownsville, Pennsylvania, General Secretary.

New Mexico Medical Society, Las Vegas, July 19-21. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.

Pacific Coast Oto-Ophthalmological Society, Butte, Mont., July 16-18. Dr. F. C. Cordes, Fitzhugh Building, San Francisco, Secretary.

Pacific Northwest Orthopedic Association, Seattle, Sept. 1. Dr. J. C. Brugman, 1215 Fourth Avenue, Seattle, Secretary.

Western Branch of American Public Health Association, Pasadena, Calif., Sept. 3-6. Dr. W. P. Shepard, 600 Stockton Street, San Francisco, Secretary.

Wyoming State Medical Society, Casper, July 16-17. Dr. Earl Wheelon, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Cancer, New York

21: 1-252 (May) 1934

*Cyclomastopathy: Physiopathologic Conception of Some Benign Breast Tumors, with an Analysis of Four Hundred Cases. R. L. Oliver and R. C. Major, Baltimore.—p. 1.
Further Evidence in Support of the Somatic Mutation Hypothesis of the Origin of Malignancy. M. R. Curtis, W. F. Dunning and F. D. Bullock, New York.—p. 86.
Cancer Cells in the Blood Stream. E. H. Pool and G. R. Dunlop, New York.—p. 99.
Three Tumors of the Thyroid. C. W. Lester, New York.—p. 103.

Cyclomastopathy.—Oliver and Major present a study of the case histories and pathologic material of 400 cases of clearly benign tumors of the breast, previously classified in their laboratory under fibro-adenoma, intracanalicular myxoma and cystic adenoma. The authors believe that the tumors mentioned are not true neoplasms but are localized masses of hypertrophied and hyperplastic breast tissue, with or without involution. The term cyclomastopathy is offered as a designation for the entire group of breast lesions which present excessive connective tissue or epithelial proliferation, or both, in response to growth stimuli or as a manifestation of abnormal involution following normal response. The term eccyclomastoma is offered as a designation for localized areas of cyclomastopathy which give rise to palpable masses or to symptoms. The peak of age incidence for all cases is reached between the age of 20 and 25 years. Women who have borne children outnumber those without children, two to one. Eccyclomastoma has a predilection for the upper, outer quadrant of the breast. A lump in the breast is the predominating symptom, occurring in 83 per cent of cases. Pain occurred in 35 per cent and pain appearing or becoming intensified at the time of the menstrual period occurred in 15 per cent. The average duration for all cases was thirty-six months; for the fibro-adenoma group, forty-four months, and for the intracanalicular myxoma group, thirty-one months. There was no significant racial difference. Movability of the mass was described in 56 per cent. In 15.75 per cent of the total number of cases the masses were multiple, involving one or both breasts. In 5.7 per cent the mass occurred in a generally lumpy breast. Dimpling of the skin was observed in eleven cases and retraction of the nipple in nine cases. In cases in which a preoperative diagnosis was made, the lesion was considered benign in 94 per cent. The operation of choice was simple excision with a zone of surrounding breast. When the size of the mass demanded it or when the diagnosis of malignant growth or of possible malignant process was made, amputation or the complete operation was done (12 per cent). The results of 188 followed for more than one year after operation are tabulated.

American Journal of Clinical Pathology, Baltimore

4: 247-320 (May) 1934

Pathology of Psittacosis: Discussion with Case Report. A. G. Foord, Pasadena, Calif.—p. 247.
*A Study of Hyperpyrexia Reaction Following Intravenous Therapy. H. M. Banks, Indianapolis.—p. 260.
Reticulocyte Counts in Healthy Children. E. E. Osgood, R. L. Baker and Mable M. Wilhelm, Portland, Ore.—p. 292.
Carcinoids of the Appendix. A. V. St. George, New York.—p. 297.
*Method of Diluting Antigen in Relation to the Wassermann Reaction. J. A. Kolmer and Carola E. Richter, Philadelphia.—p. 301.
Clinical and Pathologic Findings Following Warfare Gassing. P. B. Matz, Washington, D. C.—p. 309.

Hyperpyrexia Following Intravenous Therapy.—Banks points out that the reaction that follows the intravenous administration of solutions is an entity characterized by a prompt rise of temperature in extremely high degree and usually associated with a severe rigor lasting from twenty to thirty minutes. This clinical picture is not to be associated with shock and is entirely distinct from it. Intravenous reaction has a definite, specific, etiologic factor. This factor is the introduction of dead or living products of bacterial growth or cultures of Pseudomonas scissa or ureae into the blood stream of the patient. These organisms were isolated in pure culture from the offending solution, reinjected into the same person and produced the same clinical picture. It was not possible to recover the organism from the blood stream of the individual suffering from a reaction, even though cultures were made at various times during the rigor. The pyrogenic substance may be used as a therapeutic agent to produce hyperpyrexia.

Diluting Antigen for the Wassermann Reaction.—Kolmer and Richter believe that the manner or method of diluting extract for the Wassermann test has a slight but definite influence on antigenic sensitiveness. Turbid emulsions of antigens secured by slow or gradual dilution with sodium chloride solution are more antigenic than opalescent emulsions prepared by rapid dilution. Turbid emulsions of antigens prepared by adding extract drop by drop to the sodium chloride solution, with constant shaking, are more antigenic than turbid emulsions prepared by adding small amounts of the solution to the antigen with constant shaking. There is no detectable influence in the manner of diluting the Kolmer antigen on the hemolytic properties of this extract. Turbid emulsions of antigens prepared by slow dilution are sometimes slightly more anticomplementary than opalescent emulsions prepared by rapid dilution. In the Kolmer modification of the Wassermann test it is recommended that the antigen be diluted by adding it drop by drop to the required amount of sodium chloride solution with constant shaking to secure the maximum of turbidity as originally described in this method.

American J. Digestive Diseases and Nutrition, Chicago

1: 161-220 (May) 1934

Chronic Ulcerative Enteritis. P. Corr and W. C. Boeck, Los Angeles.—p. 161.
Gastric Secretion Following Irradiation of Exposed Stomach and Upper Abdominal Viscera by Roentgen Rays. A. M. Snell and J. L. Bollman, Rochester, Minn.—p. 164.
Single Gastric Polyp: Report of an Instance. M. G. Vorhaus and A. E. T. Rogers, New York.—p. 169.
Recurrent "Hiatus Hernia" Syndrome of Von Bergmann. F. Cunha, San Francisco.—p. 170.
Investigation Concerning Certain Substances Reported to Affect the Motility of the Gallbladder. W. L. Voegtlin and A. C. Ivy, Chicago.—p. 174.
Antipeptic Influence of Gastric Mucin. E. A. Zaus and L. S. Fosdick, Chicago.—p. 177.
Mortality in Diabetic Children. H. J. John, Cleveland.—p. 180.
Effect on Gastric Juice Secretion of Various Cooked Preparations of Haddock (Melanogrammus Aeglefinus) and of Lobster (Homarus Americanus). A. Alley, Montreal.—p. 182.
X-Ray's Contribution to the Diagnosis of the "Acute Abdomen." W. H. Stewart and H. E. Illick, New York.—p. 185.
Chronic Ulcerative Colitis: Trends in Its Present-Day Management. J. A. Bargen, Rochester, Minn.—p. 190.
Diverticulosis and Diverticulitis of the Small Intestine. I. Abell, Louisville, Ky.—p. 193.
*Congenital Pericolic Membrane Syndrome, Often Misnamed Chronic Appendicitis: Preliminary Report of Observations. W. H. Bueermann, Portland, Ore.—p. 196.
Acute Liver Degeneration: Treatment by Cholecystogastrostomy, with Discussion of Clinical, Pathologic and Physiologic Accompaniments. C. G. Heyd, New York.—p. 203.
Diverticulitis of the Colon (with Abscess Formation) Initiated by Trauma from an Enema Tip. J. M. Lynch and M. P. Cowett, New York.—p. 207.
Historical and Biologic Evolution of Human Diet. S. S. Altshuler, Detroit.—p. 215.

Congenital Pericolic Membrane Syndrome.—Bueermann discusses a symptom complex simulating chronic appendicitis, for which appendectomy has often been performed with a persistence of pain referrable to the right side. The author has five axioms to be substantiated before one may assume that a clinical entity due to the presence of harm-producing pericolic membranes and bands exists. Assuming that the usual differential diagnostic factors have been ruled out: 1. There must be a definite anatomic basis in or about the right half of the colon to produce the symptoms that persist after appendicectomy for "chronic appendicitis." If anatomic in nature, there must be an abnormal situation present, such as constriction or rotation, in order to produce an altered physiology of the functions of

the colon. 2. If the syndromes of "chronic appendicitis" and congenital pericolic membranes and bands overlap, the syndrome arising from the presence of constricting, congenital pericolic membranes remains as a relatively pure clinical syndrome when only the appendix has been removed. 3. If the syndrome arising from the presence of constricting pericolic membranes still is present after appendicectomy, correction of the causative factor by sectioning the constricting membranes and bands should relieve the patient. 4. If the symptoms considered indicative of congenital pericolic membranes can be classed as a "syndrome," it should be recognizable as such in all age groups. 5. If abnormal attachments of pericolic membranes are congenital in nature, familial or hereditary tendencies can be demonstrated in a reasonable number of patients; i. e., the same syndrome should occur in the parent and the child in a certain proportion of subjects. A number of instances of father-and-son, and mother-and-daughter similarities have been analyzed. In none of these instances had the similarity been recognized until the symptom complex had been outlined. The "exercise symptom" relationship then became apparent only in those definitely affected, even to nonrelief by appendectomy. The author terms this symptom complex the "pericolic membrane symptom."

American Journal of Orthopsychiatry, Menasha, Wis.

4: 193-322 (April) 1934

Therapeutic Work with Children: Statement of a Point of View. F. H. Allen, Philadelphia.—p. 193.
Experiments on Sucking Reflex and Social Behavior of Dogs. D. M. Levy, New York.—p. 203.
Evaluation of Classification in Prisons. J. L. McCartney, Portland, Ore.—p. 225.
Franzi. Herta Fuchs; translated by S. Biddle, Philadelphia.—p. 233.
Reliability of Observation in Psychiatric and Related Characteristics. C. R. Doering and Alice F. Raymond, Boston.—p. 249.
Weight and Skeletal Build: A Rejoinder. C. Rosenow, New York.—p. 258.
Personality Differences Among Stutterers as Indicated by the Rorschach Test. H. Meltzer, St. Louis.—p. 262.
Life Experience as Therapeusis. T. Burling, Chicago.—p. 283.
The Rorschach Method and Personality Organization: III. Psychologic and Social Personality. S. J. Beck, Boston.—p. 290.

American Journal of Physiology, Baltimore

108: 265-508 (May 1) 1934. Partial Index

Hemoglobin Production Factors in the Anemic Horse Liver. G. H. Whipple and F. S. Robscheit-Robbins, Rochester, N. Y.—p. 270.
Hemoglobin Production Factors in Normal Livers of Domestic Animals: Horse Liver Rates High and Beef Low. F. S. Robscheit-Robbins and G. H. Whipple, Rochester, N. Y.—p. 279.
Some Properties of the Cord Potentials Evoked by a Single Afferent Volley. J. Hughes and H. S. Gasser, New York.—p. 295.
Response of the Spinal Cord to Two Afferent Volleys. J. Hughes and H. S. Gasser, New York.—p. 307.
Study of the Pituitary Factor Increasing the Ovarian Weights of Immature Rats When Injected in Combination with Pregnancy Urine. S. L. Leonard, New York.—p. 331.
Sources of Energy in Muscular Work Performed in Anaerobic Conditions. R. Margaria and H. T. Edwards, Boston.—p. 341.
Observations on Epinephrine Oxidation and Stabilization. A. D. Welch, Toronto.—p. 360.
Effect of Sleep on Human Basal Metabolism, with Particular Reference to South Indian Women. Eleanor D. Mason, Madras, India, and F. G. Benedict, Boston.—p. 377.
Reactions of the Rat Uterus, Excised and in Situ, to Histamine and in Anaphylaxis. Caroline Tum Suden, Boston.—p. 416.
Relation Between Blood Pressure, Blood Urea Nitrogen and Fluid Balance of the Adrenalectomized Dog. W. W. Swingle, J. J. Pfiffner, H. M. Vars and W. M. Parkins, Princeton, N. J.—p. 428.
*Observations on Nervous Control of Ileocecal Sphincter and on Intestinal Movements in an Unanesthetized Human Subject. H. L. White, W. R. Rainey, Betty Monaghan and A. S. Harris, St. Louis.—p. 449.
Absorption of Isotonic Fluids from the Subarachnoid Space. O. A. Mortensen and L. H. Weed, Baltimore.—p. 458.
Relation Between Circulatory Rate and Absorption in the Gut. E. Gellhorn and D. Northup, Chicago.—p. 469.
Ascites and Other Effects of Large Saline Injections. D. A. Collins, Minneapolis.—p. 476.
Reactive Hyperemia: Relation of Duration of Increased Blood Flow to Length of Circulatory Arrest. M. L. Montgomery, J. M. Moore, San Francisco, and J. S. McGuinness, Cincinnati.—p. 486.
The Influence of the Thyroid on the Action of Gonad Stimulating Hormones. C. F. Fluhmann, San Francisco.—p. 498.

Observations of Intestinal Movements.—White and his associates observed the proximal colon, ileocecal sphincter and terminal ileum in an unanesthetized human subject. No definite antiperistalsis was seen in the proximal colon. The ileocecal sphincter was relaxed much of the time. The relaxed sphincter may respond to a peristaltic wave in the distal ileum with an immediate or with a delayed contraction or series of contractions, or it may show no response. The sphincter may show rhythmic activity in the absence of ileac peristalsis. Rhythmic segmentations of the ileum persist during the passage of a peristaltic wave. The wave of peristaltic contraction is not preceded by a wave of inhibition. Many of the peristaltic waves of the terminal ileum die out shortly before reaching the sphincter. The sphincter is consistently relaxed by epinephrine; its activity may be somewhat increased by pilocarpine. Solution of pituitary produces some increase in activity of the colon and a diminution in the tone and rhythmic activity of the ileum; peristalsis of the ileum may be either increased or decreased.

Anatomical Record, Philadelphia

59: 135-272 (May 25) 1934

Histologic Distribution of Fats in the Liver, Kidney, Trachea, Lung and Skin of the Rat at Various Postnatal Stages. H. G. Rice and C. M. Jackson, Minneapolis.—p. 135.
Panniculus Carnosus in an Octodont Rodent. R. K. Enders, Swarthmore, Pa.—p. 153.
*Stimulation of Mammary Gland Development in the Pregnant Rat Under Conditions of Experimental Hyperthyroidism. C. K. Weichert and R. W. Boyd, Cincinnati.—p. 157.
Dissections of Human Seminiferous Tubules. F. P. Johnson, Portland, Ore.—p. 187.
Studies on Amphibian Metamorphosis: XIV. Transformation of Dermal Plicae into Tympanic Membrane Following Heteroplastic Transplantations. O. M. Helff, New York.—p. 201.
Observations on Transplanted Immature Ovaries in the Eyes of Adult Male and Female Rats. L. Goodman, Boston.—p. 223.
Rôle of Lipoid in Renal Tubule of the Cat in Uranium Nephritis. W. Modell and Janet Travell, New York.—p. 253.

Stimulation of Mammary Gland Development.—Weichert and Boyd compared the mammary glands of pregnant rats fed 0.5 Gm. of desiccated thyroid daily, beginning with the first day of pregnancy with normal controls. Although some stimulation of the mammary gland is recognized in the animals fed thyroid even on the fifth day of pregnancy, an extraordinary increase of mammary tissue occurs between the seventh and ninth days. From the ninth day until the end of pregnancy the series of animals fed thyroid showed a marked difference not only in the amount of mammary tissue but in the earlier appearance of secretion in the alveoli. The authors suggest that under conditions of heightened metabolism resulting from thyroid feeding the normal estrin level may be lowered, thus removing the inhibitory effect of the estrin on the hypophysis, at least to a degree. That organ may thus elaborate its hormones to a greater extent than normal. The corpus luteum and hypophyseal hormones are therefore in all probability present in relatively greater concentrations than in the normal animal, the mammary glands responding to the altered conditions by exceptionally rapid development.

Canadian Public Health Journal, Toronto

25: 155-204 (April) 1934

Alberta State Health Insurance Report. A. C. McGugan, Edmonton, Alta.—p. 155.
Lighting and Atmospheric Conditions in an Ontario Public School. D. L. MacLean and Ruth C. Partridge, Toronto.—p. 161.
Problems in Infant Hygiene and What Statistics Reveal. Agnes B. Baird, Ottawa, Ont.—p. 167.
Vitamin D Content of Eggs. H. D. Branion, Guelph, Ont.—p. 171.
Mental Hygiene and Behavior. Eliza Perley Brison, Halifax, N. S.—p. 175.
Laboratory and Field Methods for the Detection of Mastitis: Part II. J. M. Rosell, Montreal.—p. 180.

Delaware State Medical Journal, Wilmington

6: 89-130 (May) 1934

Sterilization as a National Problem. M. A. Tarumianz, Wilmington.—p. 89.
Abnormal Reactions Resulting in Suicide. Persis F. Elfeld, Wilmington.—p. 96.
Mesenteric Thrombosis in a Case of General Paresis. J. W. Ballard, Wilmington.—p. 100.
Mental Hygiene Clinic as a Coordinating Unit. C. Uhler, Wilmington.—p. 102.
Psychotherapy in the Mental Hospital. E. Klein, Wilmington.—p. 104.
Pseudohypertrophic Muscular Dystrophy in Brother and Sister. R. G. Lawrence, Wilmington.—p. 108.
Pain Responses in Psychotic Patients. Joan F. McGreevy, Wilmington.—p. 110.
Intracranial Tumors. D. M. Gay and Marion L. H. Freeman, Wilmington.—p. 113.

Illinois Medical Journal, Chicago

65: 377-476 (May) 1934

The American Medical Association's Service to Medicine. C. B. Reed, Chicago.—p. 425.
The Illinois State Medical Society Service to Medicine. P. H. Kreuscher, Chicago.—p. 427.
The Chicago Medical Society's Service to Medicine. T. P. Foley, Chicago.—p. 430.
An Anatomic-Pathologic Classification of Pulmonary Tuberculosis Based on the Extension of the Processes. J. Ritter, Miami, Fla.—p. 431.
Senile Cataract: The Present Status of Intracapsular Operation. W. A. Fisher, Chicago.—p. 437.
The Relation of Urethral and Bladder Neck Lesions to Disturbance of Urination in Women. E. E. Ewert and R. D. Herrold, Chicago.—p. 440.
Some of the Advancements in the Technic of Early Diagnosis of Pulmonary Tuberculosis. D. O. N. Lindberg, Decatur.—p. 442.
Extrapleural Pneumolysis with Paraffin Pack in the Treatment of Pulmonary Tuberculosis. J. R. Head, Chicago.—p. 447.
Ureterocele. D. H. Pardoll, Chicago.—p. 449.
Benign Bone Cyst in the New-Born: Report of Case. V. Witting and J. B. Gillespie, Urbana.—p. 451.
Medical Services Under the Federal Emergency Relief Act of 1933. W. C. Woodward, Chicago.—p. 454.
Ureteral Catheterization as an Aid in Gynecologic Surgery. C. C. Saelhof, Chicago.—p. 457.
Some Weak Points in the Psychoanalytic Doctrine of the Unconscious. I. Finkelman, Elgin.—p. 457.
Status of Bismuth in the Treatment of Syphilis. S. J. Zakon, Chicago.—p. 458.
Abdominal Pregnancy: Report of Ten Cases. E. L. Cornell and A. F. Lash, Chicago.—p. 462.
Diagnosis of Abdominal Allergy. C. J. Drueck, Chicago.—p. 467.
Illinois Pioneers of Medicine. L. H. Zeuch, Chicago.—p. 470.

Iowa State Medical Society Journal, Des Moines

24: 269-312 (June) 1934

Pancreatic Lithiasis: Report of Case. H. A. Collins, Des Moines.—p. 277.
The Physician's Responsibility in Rectal Carcinoma. W. A. Fansler, Minneapolis.—p. 280.
Rectal Constipation. C. J. Drueck, Chicago.—p. 282.
Vaginal Hemorrhage in the New-Born. H. E. Kleinberg, Des Moines.—p. 286.
Gynecologic Urology. E. Von Graff, Iowa City.—p. 287.
Interstitial Pregnancy. M. L. McCreedy, Brighton, and R. J. Swinney, Richland.—p. 288.

Journal of Allergy, St. Louis

5: 331-438 (May) 1934

The Reagin Content of Blister Fluid. W. C. Spain and J. M. Newell, New York.—p. 331.
Studies on Pollen and Pollen Extracts: XII. Enzyme Digestion of Pollen Allergens. Marjorie B. Moore and L. Unger, Chicago.—p. 338.
The "Protein Unit" Standardization of Pollen Extracts Proposed by Cooke and Stull. Katherine L. Bowman, Brooklyn.—p. 341.
New Definition of the Noon Pollen Unit. A. F. Coca, Pearl River, N. Y.—p. 345.
Visceral Manifestations of Angioneurotic Edema: Report of Case with Recurrent Pulmonary Involvement. Julia Cole and H. M. Korns, Iowa City.—p. 347.
*Observations on Cytology of the Secretions in Allergy of the Nose and Paranasal Sinuses. F. K. Hansel, St. Louis.—p. 357.
Comparison of Reagins to Separate Species of Caddis Fly. H. Osgood, Buffalo.—p. 367.
The Urinary Proteose in Allergy. J. H. Black and B. Shelmire, Dallas, Texas.—p. 373.
Camomile (Anthemis Cotula) as a Skin Irritant. A. H. Rowe, Oakland, Calif.—p. 383.
Survey of a Botanic Oasis in the Desert of Northern Arizona. R. W. Lamson and A. Watry, Los Angeles.—p. 389.
Studies in Hay Fever: Clinical Observations Including a Botanic and Air Survey of the Utah Region. C. E. Barrett, Salt Lake City.—p. 406.
Castor Bean Dust Sensitization. R. H. Bennett and E. Schwartz, Brooklyn.—p. 427.

Cytology of Secretions in Allergy.—It has been the experience of Hansel that whenever marked hyperplasia and polyposis develop the membranes tend to become infected and invaded by bacteria. The neutrophilic response in the secretion in addition to the eosinophilic response is an indication of this infection. That bacteria may be present first in the mucous membrane and be the primary cause of the precipitation of an allergic condition is suggestive in some cases. He has observed cases in which the manifestations of allergy in the nose were precipitated by an acute upper respiratory infection of acute sinusitis, yet these cases did not appear to be different from the other pure allergic types. Polyposis developed in some of these cases. A pure eosinophilic response in the secretions indicates an allergic process of an atopic nature and this reaction is maintained by the ordinary allergens. The persistence of neutrophils in large numbers in addition to a certain number of eosinophils has, according to the author's experience, substantiated the belief of the existence of chronic infection. Repeated respiratory infections in cases of polyposis seem to play a part in increasing the edema, but the primary cause of polyposis appears to be allergic edema. In many cases in which there were repeated infections over a period of many years, polyposis has never occurred. There was no definite relationship between the onset of the nasal manifestations of allergy with acute infections of the upper respiratory tract and the eventual development of polyposis in the author's series of cases. In a proportion of cases of polyposis the nasal manifestations of allergy began primarily as hay fever or pollinosis.

Castor Bean Dust Sensitization.—Bennett and Schwartz discuss the cases of two persons who acquired a sensitiveness to the dust of the castor bean, characterized by sneezing, coryza, itching of the eyes, cough, wheezing respiration, and in addition in the second case urticaria of the face, neck and hands. Exposure to castor bean dust caused allergic symptoms, while avoiding it afforded complete relief. Testing intracutaneously with castor bean dust extract in the following dilutions produced the following reactions: 1:100,000, 4-plus; 1:1,000,000, 4-plus; 1:10,000,000, 3-plus; 1:100,000, 3-plus; and the second patient gave a 3-plus reaction to a dilution of 1:1,000,000. Although other extracts of powerful allergens, such as horse dander, horse serum, rabbit epithelium, cottonseed, pollens and fish, are used in tests in high dilution, castor bean extract requires still higher dilutions for testing in order to avoid constitutional reactions.

Journal of Biological Chemistry, Baltimore

105: 231-454 (May) 1934. Partial Index

Stability of Cystine in Acid Solution. K. Shinohara and M. Kilpatrick, Philadelphia.—p. 241.
Improved Method for Determination of Hemoglobin in Chicken Blood. M. O. Schultze and C. A. Elvehjem, Madison, Wis.—p. 253.
Determination of Carotene in Butter Fat. H. M. Barnett, Cleveland.—p. 259.
Estimation of Thiocyanate in Urine. E. J. Baumann, D. B. Sprinson and Nannette Metzger, New York.—p. 269.
Chemistry of the Lipids of Tubercle Bacilli: XXXVIII. New Synthesis of Phthiocol, the Pigment of the Human Tubercle Bacillus. M. S. Newman, J. A. Crowder and R. J. Anderson, New Haven, Conn.—p. 279.
Effect of Nutritional Hypoproteinemia on the Electrolyte Pattern and Calcium Concentration of Serum. D. C. Darrow and M. Katherine Cary, New Haven, Conn.—p. 327.
The Fasting Ketosis of Monkeys: I. T. E. Friedemann, Chicago.—p. 335.
Presence of Cholesterol in Feces. R. Schoenheimer, New York.—p. 355.
Studies on Enzyme Action: XLVII. Lipase Action of Serum. Grace McGuire and K. G. Falk, New York.—p. 373.
Id.: XLVIII. Lipase Actions of Horse Serum. K. G. Falk and Grace McGuire, New York.—p. 379.
*Cholesterol Content and Antirachitic Activation of Milk Constituents. S. Ansbacher and G. C. Supplee, Bainbridge, N. Y.—p. 391.
Inactivation of Pepsin, Trypsin and Salivary Amylase by Proteases. H. Tauber and I. S. Kleiner, New York.—p. 411.
Stability of Carotene in Olive Oil. R. G. Turner, Detroit.—p. 443.

Cholesterol Content of Milk Constituents.—Ansbacher and Supplee found the cholesterol content of butter oil to vary between 0.24 and 0.34 per cent. The cholesterol content of butter oil is greatly reduced by heat in the presence of incorporated air. The study of the distribution of cholesterol in milk showed that about 18 per cent of the total cholesterol of milk is associated with the proteins. The butter fat carries a greater amount of cholesterol than any other milk constituent. When calculated to the dry basis, the lactalbumin has the next highest cholesterol content, which is several times greater than that of the other milk proteins. The cholesterol content of lactalbumin appears to be more uniform than that of other milk constituents. The fatty matter associated with the proteins of milk contains a relatively constant and uniform amount of cholesterol, which is many times greater than that of butter fat. Oxidation of butter oil by heat in the presence of incorporated air diminishes, or even completely destroys, the provitamin D. The cholesterol associated with the milk proteins contains matter that can be activated antirachitically. Lactalbumin after momentary periods of exposure to ultraviolet rays shows a substantial vitamin D potency. The fatty matter of milk prosthetically bound with the proteins is indicated as being of possible significance in accounting for the clinical merits of irradiated milk.

Journal of Pediatrics, St. Louis

4: 573-714 (May) 1934

The Thymus Gland and Thymic Symptoms: Investigation of One Thousand and Seventy-Four New-Born Babies. A. Capper and R. A. Schless, Philadelphia.—p. 573.
*Bulbar Poliomyelitis and Its Treatment. E. Smith and H. I. Fineberg, Brooklyn.—p. 590.
Congenital Heart Disease: Pulmonary Stenosis of Inflammatory and Developmental Origin Complicated by Rheumatic Heart Disease and Subacute Bacterial Endocarditis. S. D. Leader and M. A. Kugel, New York.—p. 595.
Maladaptation as a Factor in Etiology of Neurosis. W. W. Barber, Denver.—p. 604.
Benign or Functional Albuminuria in Children: Further Studies. J. K. Calvin, Chicago.—p. 611.
*Use of Copper and Iron in Treatment of Secondary Anemia in Children. J. F. Cason, Durham, N. C.—p. 614.
Diabetes Mellitus in Children. Alvah L. Newcomb, Chicago.—p. 617.
*Bacillus Enteritidis Meningitis in an Infant of Fifteen Months. J. O. Vaughn, Santa Monica, Calif.—p. 631.
Convulsions in Children. H. Hosen, New Orleans.—p. 636.
Esophageal Varix: Report of Case in a Three and One-Half Year Old Child, Not Dependent on Liver Cirrhosis. E. Friedman, Denver. —p. 641.
Hypothyroidism and Cretinism in Childhood: II. Capillary Permeability. I. P. Bronstein and Margaret E. Milliken, Chicago.—p. 648.
Effect of Cooking on Digestibility of Cereals. J. R. Ross and Lida M. Burrill, Toronto.—p. 654.
The Discard of the Cradle. J. Zahorsky, St. Louis.—p. 660.
Chickenpox in an Eight Day Old Infant. W. B. Henderson, Chicago. —p. 668.

Bulbar Poliomyelitis and Its Treatment.—Smith and Fineberg present the clinical signs and symptoms of unilateral and bilateral paralysis of the palate in acute anterior bulbar poliomyelitis. Their experience with 1,325 cases of poliomyelitis, of which 29 per cent were bulbar, convinces them that lumbar puncture is unnecessary and definitely contraindicated in bulbar poliomyelitis in which paralysis is self evident. When the diagnosis is doubtful and a lumbar puncture is essential, a small amount of fluid should be withdrawn slowly, because when the subarachnoid pressure is suddenly released by lumbar puncture the pressure within the cord is similarly released. The spinal cord bulges instantly, the capillaries dilate and blood rushes into them. With the sudden onrush of blood, oozing takes place from the finer blood vessels and additional capillary ruptures in the bulb are liable to occur and in many instances probably do occur. When the bulb is the site of hemorrhage, edema results; the vital centers are strangulated and death is sure to follow. Lumbar puncture does not benefit the patient but subjects him to the danger of hemorrhage into the bulb. The use of the respirator is definitely contraindicated in these cases. It is indicated in intercostal, diaphragmatic and abdominal muscle paralysis, in which prolonged artificial respiration is required. Paralysis of the respiratory center, when and if it occurs, is part of the vasomotor collapse and a phase of the terminal picture. All drugs that depress the respiratory center are contraindicated. Atropine sulphate, when given in large doses, is a depressant of the respiratory center and therefore its repeated use is inadvisable. Patients who are unable to swallow because of partial or of complete palatine paralysis should be put to bed in a prone position on a hard mattress. Usually there is a marked flow of mucus from the mouth and nose. Most of the secretions are removed in this manner, but a considerable amount of the mucus may remain in the pharyngeal space and stagnate behind the posterior pillars. To diminish the possibility of aspiration pneumonia and catarrhal or purulent otitis media, suction should be instituted by gently introducing a suction catheter into the mouth and throat. From 3 to 4 ounces of tap water, at body temperature, is introduced by rectum every four hours by means of a funnel and catheter during the first day. On the next day, in addition to this, hypodermoclyses of a 5 per cent solution of dextrose in physiologic solution of sodium chloride are started. Two daily hypodermoclyses and instillations of water by rectum are continued as long as nausea persists. The restlessness and nausea correspond to the period of elevated temperature. Nasal gavage is not begun until the elevation of temperature has subsided. The amount of fluid in the first gavage should not exceed 2 ounces. The amounts are gradually increased until a maximum of 8 ounces every four hours is reached. The gavage diet consists of 8 ounces of milk, 2 ounces of sugar and one egg. As soon as the palate begins to move, the patient is placed in a supine position without a pillow, and a semisolid diet is given. The head is then slowly elevated from day to day until the child is able to take nourishment without any difficulty.

Copper and Iron in Treatment of Secondary Anemia.—Cason used copper and iron in the treatment of six children suffering from secondary anemia due to malnutrition or infections, whose hemoglobin varied from 40 to 74 per cent. They were given from 5 to 10 cc. (according to their ages) of a solution containing 0.5 Gm. of cupric sulphate and 10 Gm. of ferric ammonium citrate per hundred cubic centimeters of 25 per cent solution of aromatic elixir (U. S. P.), three times a day. Six children whose secondary anemia was similar to that of the first group and whose hemoglobin on admission averaged 63 per cent were given cuprous and ferrous glutamate. This material was made up in capsules, each of which contained 30 mg. of cuprous glutamate and 750 mg. of ferrous glutamate. The dosage was three capsules daily. The hemoglobin content of these children was determined at intervals for an average of four weeks by the Sahli method and recorded on a percentage basis, 16 Gm. of hemoglobin per hundred cubic centimeters of blood being regarded as 100 per cent. The children treated with the cupric and ferric compound and those given the cuprous and ferrous compound showed the same rate of increase in their hemoglobin content, 4.6 per cent each week.

Bacillus Enteritidis Meningitis.—Vaughn reports a case of meningitis caused by Bacillus enteritidis of Gärtner in an infant, aged 15 months, in whom the colitis found at necropsy, with the history of diarrhea preceding the onset of meningeal symptoms, suggests that the portal of entry of infection was the intestinal mucosa. The positive blood culture warrants the assumption that the meningeal involvement was metastatic through the blood stream. Bacillus enteritidis was found in the mastoid antrum, although the tympanic membranes showed no evidence of middle ear infection during life.

Journal of Pharmacology & Exper. Therap., Baltimore

51: 1-126 (May) 1934

Study of Cyclopropane Anesthesia, with Especial Reference to Gas Concentrations, Respiratory and Electrocardiographic Changes. M. H. Seevers, W. J. Meek, E. A. Rovenstine and J. A. Stiles, Madison, Wis.—p. 1.
Effect of Posterior Pituitary Preparations on the Blood Flow of the Normal Intact Dog. E. M. K. Geiling, Baltimore; J. F. Herrick and H. E. Essex.—p. 18.
Action of Crystalline Thevetin, a Cardiac Glucoside of Thevetia Neriifolia. K. K. Chen and A. L. Chen, Indianapolis.—p. 23.
Studies of Morphine, Codeine and Their Derivatives: IV. Hydrogenated Codeine Isomers. N. B. Eddy, Ann Arbor, Mich.—p. 35.
*Low Oxygen Tensions and Temperatures on Actions and Toxicity of Dinitrophenol. M. L. Tainter, San Francisco.—p. 45.
Interaction of Acetylcholine and Epinephrine on Isolated Small Intestines of Various Animals. F. Bernheim, Durham, N. C.—p. 59.
Interaction of Acetylcholine, Epinephrine and Certain Other Drugs on the Isolated Small Intestine of the Rat. F. Bernheim, Durham, N. C.—p. 68.
Studies of Phenanthrene Derivatives: II. Monosubstitution Products, First Variations: Effect of Muzzling the Hydroxy Group of 2- or 3-Hydroxyphenanthrene. N. B. Eddy, Ann Arbor, Mich.—p. 75.
Effects of Morphine and Its Derivatives on Intestinal Movements: II. Effect of Morphine on Pressures Developed by the Intestinal Musculature. H. Krueger, Ann Arbor, Mich.—p. 85.
Rôle of Acetylcholine in Bladder Contractile Mechanisms and in Parasympathetic Ganglions. V. E. Henderson and M. H. Roepke, Toronto.—p. 97.
*Aspirin and Calcium Aspirin: Their Action on Growing Bone. N. Mutch, London, England.—p. 112.

Dinitrophenol.—Tainter observed that rats in which metabolism was increased by the administration of dinitrophenol or thyroid were found to be more susceptible to lowered oxygen tensions in the respired air than were normal rats. For the same degree of metabolic stimulation, dinitrophenol had an effect on the sensitivity to oxygen lack similar to that of thyroid; hence dinitrophenol cannot serve in an oxygen-sparing capacity in the intact organism. Inhalation of pure oxygen markedly reduced the toxicity of dinitrophenol for rats, as indicated by mortality curves. The administration of oxygen may therefore be of value as an antidote in cases of clinical overdosage with dinitrophenol. Dinitrophenol failed to cause its usual metabolic stimulation in rats, guinea-pigs and pigeons kept at atmospheric temperatures of from 2 to 6 C., as indicated by oxygen consumption or body temperature changes,

and it caused fewer fatalities. This abolition of metabolic action was not due to impaired absorption of the drug from the subcutaneous tissues, since the same peculiarity was observed with intraperitoneal injections. The author discusses the various possible explanations of this phenomenon and suggests that, since low temperatures decrease the toxicity of dinitrophenol, the use of ice packs or other cold applications to the skin in addition to inhalation of oxygen is worthy of trial in cases of clinical poisoning or overdosage with the drug.

Action of Acetylsalicylic Acid on Growing Bone.—Mutch performed experiments on rats in which relatively large doses of acetylsalicylic acid (equivalent on a per kilogram basis to ten times the maximal official British Pharmacopeia dose) given daily for a month did not cause any decalcification of the bone as judged by roentgen translucency. Acetylsalicylic acid broadens the calcified zone in ossifying cartilage. This effect is due to the acetylsalicylyl radical rather than to the acidic nature of the drug. The addition of calcium to the molecule to form the calcium salt protects young animals from the harmful action of the drug on growing bone. Calcium acetylsalicylic acid taken by mouth raises the proportion of calcium in the blood serum. Repeated slightly toxic doses of calcium acetylsalicylic acid interfere less with the growth of young rats than do equivalent amounts of acetylsalicylic acid itself.

Kentucky Medical Journal, Bowling Green

32: 227-274 (May) 1934

Management of Incomplete Abortion. T. K. Van Zandt, Louisville.—p. 230.
Obstetrics: The Tuberculous Pregnant Woman. J. L. Reddick, Paducah.—p. 233.
Id.: Immediate Repair of Injuries to the Birth Canal. J. G. Slater and J. L. Molony, Covington.—p. 235.
Id.: Management of Puerperal Infections. H. A. Davidson, Louisville.—p. 239.
The Cardiopath. O. P. Nuckols, Pineville.—p. 246.
Lymphopathia Venerea Involving the Rectum. R. C. Alley, Lexington.—p. 250.
A Plain Talk to the Public on Cancer. L. Frank, Louisville.—p. 251.
Gastric and Duodenal Ulcer. O. W. Brown, Foster.—p. 254.
Office Treatment of Eye Injuries by Family Physicians with Some Suggestions as to What to Do and What Not to Do. R. W. Bledsoe, Covington.—p. 259.
Congestive Heart Failure and Thyroidectomy. W. O. Johnson, Louisville.—p. 260.
Aschheim-Zondek Test for Pregnancy. W. H. Allen, Louisville.—p. 264.
Pituitary Adenoma: Report of Case. A. E. Leggett, Louisville.—p. 267.
New Method of Treating Peptic Ulcer. F. M. Stites Jr., Louisville.—p. 268.
Interlobar Pleurisy. J. R. Morrison, Louisville.—p. 271.

Laryngoscope, St. Louis

44: 349-430 (May) 1934

Sinus Thrombosis I. An Obscure Case of Sinus Thrombosis with Unusual Complications. M. J. Gerstley, New York.—p. 349.
Id.: II. Case of Right Acute Mastoditis with Lateral Sinus Thrombosis; Septicemia (Betahemolytic Streptococcus); Operation and Recovery. G. W. McAuliffe, New York.—p. 353.
Id.: III. Parapharyngitis Following Infection of the Lower Jaw After Tooth Extraction. S. Knopf, New York.—p. 356.
Id.: IV. Cases of Jugular Thrombophlebitis Following Infections of the Face and Throat. J. W. Babcock, New York.—p. 360.
Treatment of Lateral Sinus Phlebitis, Thrombosis and Otitic Septicemia with Nonspecific Immunotransfusions. M. S. Ersner and D. Myers, Philadelphia.—p. 363.
*Gross Pathologic Changes in Mastoids on Various Days Following the Onset of Acute Suppurative Otitis Media. A. P. Tibbets, Washington, D. C.—p. 369.
Otitic Generalized Infection; Origin; Management; Outcome. A. Kovacs, Milwaukee.—p. 373.
Consideration of Genuine Ozena. H. L. Pollock, Chicago.—p. 380.
The Rationale of Surgical Treatment for Ozena: Presentation of Cases Operated by the Author's Method. A. Wachsberger, New York.—p. 394.
Systemic Complications in Sinusitis. N. Settel, New York.—p. 398.
I. Squamous Cell Carcinoma of the Uvula, Soft Palate and Tonsils: II. Acute Mastoditis, Lateral Sinus Thrombosis, Abscess of Internal Jugular Vein, Operation and Recovery. C. Kaplan, Brooklyn.—p. 407.
Tonsil Tissue as a Hemostatic. H. H. Amsden, Concord, N. H.—p. 415.

Pathologic Changes in Mastoids.—To visualize what takes place within the mastoid on successive days following the onset of acute suppurative otitis media, Tibbets analyzed his observations in twenty-five cases that came to operation. He observed that, in acute mastoiditis, marked pathologic changes may be present in the mastoid as early as the third day following the onset of an acute suppurative otitis media. The rapidity of bone destruction depends to a great extent on the age of the patient, being more rapid in the young. In his series, four out of five complications occurred in patients having sclerotic mastoids. This type of mastoid can be detected roentgenologically and would seem to be an indication for early operation. Some patients with acute labyrinthitis, Gradenigo's syndrome and meningeal irritation may recover without other intervention than the simple mastoid operation. A sudden decrease or cessation of discharge from the middle ear, in the presence of a free opening in the drum and with an exacerbation of clinical symptoms, nearly always means complete blocking of the mastoid antrum, which can be relieved only by operation. In patients who continue to show signs of mastoid involvement as late as the eighteenth day following the onset of an acute suppurative otitis media, even without marked evidence of bone destruction, there exists a sufficient pathologic condition within the mastoid to make a satisfactory recovery without operation seem extremely doubtful.

Medical Annals of District of Columbia, Washington

3: 89-118 (April) 1934

Neuropsychiatric Aspects of Female Endocrinology. N. D. C. Lewis, Washington.—p. 89.
Lead Encephalopathy: Report of Case. A. Schneider, Washington.—p. 94.
Histopathology of Lead Encephalopathy. W. Freeman, Washington.—p. 96.
Allergic Sinusitis. H. O. House, Washington.—p. 97.
Fundamentals of Internal Medicine: Diseases of the Heart. W. M. Yater, Washington.—p. 100.

3: 119-152 (May) 1934

Expert Medical Testimony in Nervous and Mental Cases. W. E. Miller, Washington.—p. 119.
*Division and Ligation of Superior and Inferior Thyroid Arteries in Treatment of Angina Pectoris: Report of Case. E. Horgan and J. A. Lyon, Washington.—p. 123.
The Child and the Ophthalmologist. F. D. Costenbader, Washington.—p. 127.
Prostatic Abscess Complicating Diabetes Mellitus and Septicemia: Report of Case. A. Kemble, Washington.—p. 130.
Fundamentals of Internal Medicine: Diseases of the Heart. W. M. Yater, Washington.—p. 132.

Division of Thyroid Arteries in Angina Pectoris.—In studying a group of patients from five to ten years after thyroidectomy had been performed on account of persistent or recurrent hyperthyroidism, Horgan and Lyon observed that the patients who had had a subtotal thyroidectomy with ligation of both superior and both inferior thyroid arteries did not show any evidence of hyperthyroidism and that the tachycardia or auricular fibrillation had ceased. They conclude that stopping the effects of hyperthyroidism was not entirely due to removal of the major portion of the thyroid, but that the division and ligation of the superior and inferior thyroid arteries cut the pathway of stimuli from the sympathetic nervous system to the thyroid and consequently prevented regeneration of the tissue that was allowed to remain, thus avoiding overactivity of the remaining tissue by stimulation. The effect of this operative procedure was also shown to lower the basal metabolic rate, to lower the circulatory demands and to lighten the work of the heart. Because the results of this operation had been so striking, the authors used a similar method in a case of congestive heart failure and angina pectoris; that is, cutting off most of the blood supply and cutting the pathways of stimuli to the thyroid by dividing both superior and both inferior thyroid arteries at one operation. The patient has been relieved of anginal failure and has enjoyed relatively active life for four months.

Nebraska State Medical Journal, Lincoln

19: 161-200 (May) 1934

Collective Individualism in Medicine. E. H. Skinner, Kansas City, Mo.—p. 163.
Causal Relationship of Trauma to Paralysis Agitans, from the Surgeon's Point of View. H. C. Miller, Omaha.—p. 165.
Cardiac Therapy. F. Niehaus, Omaha.—p. 168.
Review of Digitalis Therapy. M. C. Andersen, Omaha.—p. 172.
Sexual Neuroses as Problems in General Practice. A. L. Cooper, Scottsbluff.—p. 176.
Practical Consideration of Body Complaints in the Absence of Evidence of Organ Pathology. R. H. Young, Omaha.—p. 179.
Newer Conceptions of Blood Pressure Readings with Relationship to Body Surface and Weight. A. C. Stokes, Omaha.—p. 182.
Influence of Heredity in Transmission of Ocular Defects. C. M. Swab, Omaha.—p. 184.

New England Journal of Medicine, Boston

210: 983-1042 (May 10) 1934

Study of Two Hundred and Thirty-Six Compound Fractures Treated at the Massachusetts General Hospital. E. M. Daland, Boston.—p. 983.
*Leukoplakia Buccalis and Keratosis Labialis. S. H. Sturgis and C. C. Lund, Boston.—p. 996.
Operative Surgery in the Pulmonary Tubercular. F. H. Washburn, Holden, Mass.—p. 1006.
Bronchoscopy in the Sanatorium. G. A. Rice, Holden, Mass.—p. 1008.
Bilateral Pneumothorax. G. Nadeau, Rutland, Mass.—p. 1012.
Evolution of Pneumothorax Therapy. A. Laroche, Rutland, Mass.—p. 1013.
Thyroid Diseases. F. H. Lahey, Boston.—p. 1016.
Prevention of Litigation Requires Early and Thorough Examination and a Correct Diagnosis. H. F. Stoll, Hartford, Conn.—p. 1022.
Acromioclavicular Dislocation and Its Repair. F. J. Cotton and G. M. Morrison, Boston.—p. 1025.

Leukoplakia Buccalis and Keratosis Labialis.—From a study of 520 cases of leukoplakia buccalis and keratosis labialis, Sturgis and Lund believe that the lesions are definitely precancerous. Bad dental hygiene and the use of tobacco are both almost universal and equally important as etiologic factors in leukoplakia and keratosis of the mouth and lip. Syphilis is found in about 30 per cent of patients with leukoplakia of the tongue, but it is of minor importance in all other buccal locations of this lesion. In the series of cases studied, the location of the lesion appears to have no prognostic significance. Similarly, the duration of the lesion before treatment has apparently no definite bearing on the results of treatment. The size and extent of the lesion seem definitely to influence the prognosis on the basis of treatment received between 1918 and 1926 at the clinic of the Huntington Memorial Hospital. Extensive leukoplakias involving wide areas of the buccal mucous membrane do not respond well to irradiation. If the lesion persists after all the irritating factors are removed the patient must be kept under constant observation, and prompt electrosurgical excision should be done of any areas showing suggestive evidence of cancer.

New York State Journal of Medicine, New York

34: 433-474 (May 15) 1934

Psychoanalysis in Psychiatric Practice. B. Glueck, New York.—p. 438.
Department of Health Diagnostic Cardiac Clinic of New York City. M. Goodman and Josephine W. Prescott, New York.—p. 444.
Heart Disease Among Children of School Age. J. V. de Porte, Albany.—p. 448.
The Failing Heart of Middle Life. H. E. B. Pardee, New York.—p. 451.
Abdominal Pain in Children. E. S. Rimer, New York.—p. 456.
Biopsy as an Aid to Diagnosis. S. Pollitzer, New York.—p. 462.

Northwest Medicine, Seattle

33: 151-188 (May) 1934

Migraine. A. H. Gordon, Montreal.—p. 151.
Pulsion Diverticulum of Pharynx: Report of Case. J. T. Rooks, J. W. Ingram and C. J. Johannesson, Walla Walla, Wash.—p. 156.
Cold Epidemics and Diet. E. V. Ullmann, Portland, Ore.—p. 161.
Amebiasis: Survey of One Thousand and Thirty-Two Stool Examinations. S. M. Creswell and C. E. Wallace, Tacoma, Wash.—p. 165.
Undulant Fever in Oregon. W. Levin, Portland, Ore.—p. 168.
Sleep and Its Disorders. A. T. Mathers, Winnipeg, Manit.—p. 171.
Technic for Pleural Aspiration. H. L. Hull, Elma, Wash.—p. 174.
Malignant Neutropenia Due to Miliary Tuberculosis of Bone Marrow. K. Winslow, Seattle.—p. 176.

Ohio State Medical Journal, Columbus

30: 273-336 (May 1) 1934

Preoperative Pathology in Its Relation to Postoperative Gallbladder Deaths. D. W. Palmer, Cincinnati.—p. 293.
Breech Delivery. W. R. Barney, Cleveland.—p. 297.
Auditory Hallucinations in Problem Children. A. T. Childers, Cincinnati.—p. 299.
Ocular Allergy. A. D. Ruedemann, Cleveland.—p. 304.
Public Health Within the Hospital. H. L. Rockwood, Cleveland.—p. 306.
Bromide Intoxication. G. T. Harding Jr. and G. T. Harding 3d, Columbus.—p. 310.

Oklahoma State Medical Assn. Journal, McAlester

27: 153-194 (May) 1934

Pneumonia: Differential Typing and Treatment. E. H. Shuller, McAlester.—p. 153.
Nonspecific Protein Therapy. C. H. Haralson, Tulsa.—p. 156.
The Present Status of the Vitamins. D. J. Underwood, Tulsa.—p. 158.
Relief of Prostatic Hypertrophy and Bladder Neck Resection by the Transurethral Method. W. J. Wallace, Oklahoma City.—p. 162.
Chronic Gonorrhea in the Male. S. F. Wildman, Oklahoma City.—p. 165.
Subphrenic Abscess Following Appendiceal Abscess: Nather-Ochsner Method of Drainage with Case Report. B. W. Ward, Tulsa.—p. 167.

Philippine Islands Med. Association Journal, Manila

14: 165-208 (May) 1934

Relation of Health Service to Physical Education and Athletics in Foreign Schools and Universities. S. A. Francisco, Los Baños.—p. 165.
Treatment of Malaria. P. F. Russell, New York.—p. 182.

Philippine Journal of Science, Manila

53: 211-378 (March) 1934. Partial Index

The Nutritive Value of the Mountain Apple Eugenia Malaccensis or Jambosa Malaccensis. C. D. Miller, Ruth C. Robbins and K. Haida, Honolulu, H. I.—p. 211.
Solar Ultraviolet Radiometry: IV. Ultraviolet of Sunlight in Manila. W. D. Fleming, Manila.—p. 339.

Psychoanalytic Quarterly, Albany, N.Y

3: 153-338 (April) 1934

Mental Processes in Thyrotoxic States. Therese Benedek, Leipzig, Germany.—p. 153.
Polysurgery and Polysurgical Addiction. K. A. Menninger, Topeka, Kan.—p. 173.
Thalassa: Theory of Genitality. S. Ferenczi.—p. 201.
Outline of Clinical Psychoanalysis. O. Fenichel, Oslo, Norway.—p. 221.
Contributions to Problem of Humor. A. Winterstein, Vienna, Austria.—p. 303.

Public Health Reports, Washington, D. C.

49: 595-614 (May 18) 1934

Silicosis. R. R. Sayers.—p. 595.
Clonorchiasis in Hawaii: Report of Cases in Natives of Hawaii. C. H. Binford.—p. 602.

49: 615-648 (May 25) 1934

Incidence of Illness Among Male Industrial Employees in 1933 as Compared with Earlier Years. D. K. Brundage.—p. 615.
Production of Dibenzanthracene Tumors in Pure Strain Mice. H. B. Andervont.—p. 620.

South Carolina Medical Assn. Journal, Greenville

30: 65-98 (April) 1934

Cancer of the Colon and Rectum. J. S. Horsley, Richmond, Va.—p. 69.
Significance of Hemoptysis. P. P. Vinson, Rochester, Minn.—p. 72.

30: 99-120 (May) 1934

*Symptoms Suggestive of Duodenal Ulcer Arising from Hookworm Infection. J. H. Gibbes, Columbia.—p. 102.
Diagnosis and Surgical Treatment of Malignant Lesions of the Large Bowel. F. W. Rankin, Lexington, Ky.—p. 110.

Symptoms in Hookworm Infection Suggestive of Duodenal Ulcer.—Gibbes states that the symptoms caused by parasitic fixation in the duodenum are not typical symptoms of ulcer. The patients have a hunger pain, but they do not have the pain with the unfailing, clocklike regularity of true ulcer. The pain seems to be located quite frequently in the left upper part of the abdomen. The sufferers from duodenal ulcer, irrespective of treatment, will classically become symptom free at intervals and go for months with "perfect digestion." In the patient having intestinal parasites the symptoms continue without such periods of relief. The true ulcer patient often puts his finger on a localized point of tenderness in the right upper part of the abdomen, while the intestinal parasite victim complains of much more diffuse tenderness. The physical examination yields almost nothing of exact differentiating value. The blood picture of an eosinophilia should always suggest the possibility of an intestinal parasite and is often the lead that elicits a correct diagnosis. The number of eosinophils varied in these diseases from 2 per cent to as high as 17 per cent in the author's series, though much higher counts have been reported. Careful examination of the feces gives the most positive information. The success of a search for eggs of parasites will depend to a marked degree on the suspicion of their presence. The roentgen observations of the stomach and duodenum are to some extent similar in duodenal ulcer and in parasitic disease of the intestinal tract. The stomach is irritable and tends to empty with abnormal rapidity in both conditions. The pylorus is spastic and the duodenal cap is abnormal. However, in duodenal ulcer the duodenal deformity persists in spite of every effort to overcome it, while the duodenal deformity resulting from parasitic disease can be made to disappear under fluoroscopic manipulation. The back and forth, churning movement in the duodenum associated with hookworm disease, and described by Henderson, is an important diagnostic criterion.

Southwestern Medicine, Phoenix, Ariz.

18: 151-184 (May) 1934

Transurethral Prostatic Resection: Report of Fifty Cases. D. M. Davis, Phoenix, Ariz.—p. 151.
Traumatic Neurosis. R. F. Palmer, Phoenix, Ariz.—p. 154.
Clinical Indications for Blood Transfusions. J. D. Hamer, Phoenix, Ariz.—p. 156.
Brain Injuries. G. E. Tarkington, Albuquerque, N. M.—p. 160.
Mental Mechanisms. C. W. Irish, Los Angeles.—p. 164.
Food Allergy: Résumé of Literature: Personal Observations. O. H. Brown, Phoenix, Ariz.—p. 168.
Ragweeds as Spring Pollinators. E. A. Gatterdam, Phoenix, Ariz.—p. 173.

Texas State Journal of Medicine, Fort Worth

30: 1-60 (May) 1934

Narcotic Drug Addiction. W. L. Treadway, Washington, D. C.—p. 7.
Polyneuritis and Deficiency Diseases. E. M. Perry, Dallas.—p. 16.
Consideration of Pleurisy with Effusion and Pneumothorax and Atelectasis. B. R. Collins, Wichita Falls.—p. 18.
Rat-Bite Fever: Report of Two Cases. A. A. Chapman and J. Chapman, Sweetwater.—p. 22.
Some Recent Advances in the Management of Sterility Cases. Q. U. Newell, St. Louis.—p. 23.
Postpartum Hemorrhage. J. Z. Gaston, Houston.—p. 27.
Pathology and Treatment of the Complications of Ovarian Cysts. L. C. Arnim, Corpus Christi.—p. 30.
Intracapsular Extraction of Cataract. W. J. Woolsey, Waco.—p. 35.
Injuries of the Chest. F. P. Miller, El Paso.—p. 40.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

42: 251-308 (May) 1934

Gain of Weight in Pregnancy in Relation to Weight of New-Born. B. J. Hanley, Los Angeles.—p. 251.
Ovarian Cysts. W. L. A. Wellbrock, Rochester, Minn.—p. 255.
Electrocoagulation of the Cervix. M. S. Sichel, Portland, Ore.—p. 261.
Congenital Syphilis. H. S. Campbell, Los Angeles.—p. 263.
Spinal Versus General Anesthesia. R. W. Binkley, Selma, Calif.—p. 268.
Dysmenorrhea: Menstrual Experience as Related to Histories and Physical Measurements. Ruby L. Cunningham, Berkeley, Calif.—p. 274.
Acquired External Fecal Fistulas Involving the Anterior or Lateral Abdominal Wall. A. P. Heineck, Chicago.—p. 282.
Experimental Attempt to Produce Hepatic Damage in the Dog by Feeding of Cinchophen. W. C. Hunter and G. A. C. Snyder, Portland, Ore.—p. 288.

Wisconsin Medical Journal, Madison

33: 325-392 (May) 1934

Full Thickness Skin Grafts in Finger Amputations. T. S. O'Malley, Milwaukee.—p. 337.
Uterine Fibroids and Radium: Résumé of Three Hundred and Seventy Cases in Private Practice. A. O. Olmsted, Green Bay.—p. 340.
Use of Colloidal Phase in Urine for Diagnostic Purposes. F. Eigenberger, Sheboygan.—p. 345.
*Bacterial Endocarditis: Case of Primary (?) Acute Staphylococcus Aureus Endocarditis with Recovery. M. M. Baumgartner, Janesville.—p. 349.
Radiation Therapy in Medical Practice: III. Intra-Oral Carcinoma, with Especial Consideration of the "Coutard Method." E. A. Pohle, Madison.—p. 353.
Treatment of Tuberculosis in General Practice: IV. Tuberculous Pleurisy. A. L. Banyai, Wauwatosa.—p. 355.
Melanosarcoma of Iris and Ciliary Body: Report of Case. B. I. Brindley, Madison.—p. 359.

Staphylococcus Aureus Endocarditis with Recovery.—Baumgartner reports a case of bacterial endocarditis in which the chief complaint was high fever with a temperature following a chill ranging from 103 to 104 F. daily for seventeen days, fulness in the chest and a healing carbuncle on the right buttock. Five days after admission, 3 grains (0.2 Gm.) of sodium cacodylate was administered intravenously, and daily injections of from 7 to 7½ grains (0.45 to 0.48 Gm.) of the drug were given subsequently. Sodium cacodylate was discontinued on the twentieth day. Following this therapy the temperature never exceeded 102 F. and with one or two exceptions the peak of the daily temperature dropped several tenths of a degree each day until 98.6 F. was reached. Three weeks later there was an increase of 22 pounds (10 Kg.), the heart was apparently normal on examination and no pathologic change was detected in the knee. Two weeks later the leukocyte count was 8,800; the patient was again having trouble with the right knee and was placed on crutches. A blood culture made two weeks later was negative for any growth after an incubation period of one week. The patient has been examined at frequent intervals since with no evidence of recurrence of his trouble. One and one-half years after his illness there has been a gain in weight of 40 pounds (18 Kg.) and the only cardiac abnormality demonstrated by physical examination is a faint presystolic murmur.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

46: 207-256 (May) 1934

Tuberculin Treatment of Lupus Vulgaris. R. Aitken.—p. 207.
*Epidemic Papulopustular Eruption of Occupational Origin Occurring in Coal Miners. G. B. Dowling and R. T. Brain.—p. 215.
The Prognosis of Psoriasis. R. Hallam.—p. 221.

Epidemic Papulopustular Eruption in Coal Miners.—Dowling and Brain discuss an epidemic causing papulopustular eruptions, which occurred recently among colliers working in a Kent coal mine. There were no constitutional symptoms. A man who was in otherwise normal health experienced an irritation while at work and developed a widespread eruption of more or less constant distribution within a few hours. This eruption became more widespread and more irritable during the succeeding few days, whether the man remained at work or not, and then if he ceased work began to die down spontaneously. With one exception in the case of those who remained at work no remission took place, and most of those who returned to work before the eruption had cleared up promptly relapsed. Some of those who recovered have since relapsed on returning to work. The eruption consisted of closely set punctate lesions involving in every case the extensor aspects of the thighs, knees, legs, buttocks and forearms and in many cases the flexural aspects of the forearms, the waist line, the chest and the back. In almost every case the eruption was most dense on the hairy part of the thighs, knees, buttocks and forearms. The lesions consisted of discrete papules; some were almost flat, many were scaly, and a certain proportion were capped by a small crust or pustule. In patients having rather dry skins the eruption consisted of flat, dry scaly spots of eczematous type, either discrete or aggregated into irregular patches. On the nonhairy parts of the skin, such as the abdomen, chest and back, the lesions were usually small dry papules, rather like those of the follicular variety of seborrheic eczema. A biopsy examined serially showed one of the lesions to consist of a superficial staphylococcic pustule with its subcorneal colony of organisms. Direct smears and cultures from the pustules revealed the presence of Staphylococcus albus and occasionally aureus. The etiologic problem appears to have three possible solutions: (1) The atmospheric conditions prevailing in the mine at the time were noxious to the miners' skins, perhaps because the mine was closed for a few days, (2) there was some new irritating property in the coal dust which, in combination with intense sweating, was capable of producing an irritant folliculitis, and (3) the condition might be due to infection in the mine with some fungus or organism.

British Medical Journal, London

1: 787-834 (May 5) 1934

Strangulated Hernia: Its Prevention and Treatment Under Local and Other Anesthetics. R. W. Power.—p. 787.
Vitamins A and D: Their Relation to Growth and Resistance to Disease. R. Sutherland.—p. 791.
Recent Advances in Anesthetics. R. Jarman.—p. 796.
The Nature of High Arched Palate. O'C. O'Sullivan.—p. 800.

1: 835-880 (May 12) 1934

Chemical Transmission of the Effects of Nerve Impulses. H. Dale.—p. 835.
Disease at Its Onset, with Especial Reference to Ocular Manifestations. A. M. Ramsay.—p. 841.
*Avertin Narcosis in Operations for Toxic Goiter. G. Keynes.—p. 844.
*Electrocardiographic Changes During Brief Attacks of Angina Pectoris. M. K. Gray.—p. 847.
Magnesium Deficiency in the Rat. R. W. Brookfield.—p. 848.
Certain Medicolegal Difficulties Concerning Occupational Dermatitis. P. B. Mumford.—p. 860.

Tribrom-Ethanol Narcosis in Operations for Goiter.—In employing tribrom-ethanol narcosis in toxic goiter operations, Keynes gave the patients one-eighth grain (0.008 Gm.) two hours before and one-twelfth grain (0.005 Gm.) of morphine one hour before operation. Forty-five minutes before operation the patient is given 0.09 or 0.1 Gm. of tribrom-ethanol solution per kilogram of body weight by rectum. The larger amount is given to the more acutely toxic patients. All the patients have been unconscious when brought to the oper-

ating table except one, who was suffering from diarrhea and was unable to retain more than a fraction of the dose. When the patient has been placed on the operating table, the mask for the administration of gas and oxygen is fixed in position, but as a rule no gas is given at this stage. The operative area is infiltrated with a 0.5 per cent solution of procaine hydrochloride in physiologic solution of sodium chloride containing 1 : 500,000 of epinephrine hydrochloride. The infiltration is effected rapidly with a Dunn self filling syringe. The volume of solution used is usually from 100 to 150 cc. For some of the more mildly toxic patients this combination of basal narcosis and local infiltration with procaine hydrochloride is all that is needed, but in fewer than 10 per cent is the operation completed without any gas and oxygen being given. Once the patient has been roused, gas and oxygen is begun at once. Perfect anesthesia can be maintained with a minimal amount of gas, and cyanosis can be avoided entirely. When the patient is back in bed, he usually remains quiescent for two hours or more, so that mental disturbance is eliminated at this stage as effectually as before. Under tribrom-ethanol narcosis the pulse rate may rise a little with the initial disturbance and the induction with gas and oxygen, but not infrequently the pulse rate is actually lower at the conclusion of the operation than at the beginning. There is seldom any alarming rise of pulse rate during the operation. Of the author's 220 patients who have been operated on under tribrom-ethanol narcosis, only three died soon afterward. One of these was a woman of 24, who was acutely ill. Of the other two patients, one had gross auricular fibrillation and died from heart failure a few hours after the operation. The other was so ill that she developed an acute thyroid crisis a few hours after the ligature of one superior thyroid artery and died.

Electrocardiographic Changes in Angina Pectoris.—Gray presents four cases of angina pectoris having a brief attack in the consulting room. The attacks were probably induced by excitement, as there was no preceding exertion, and were relieved by rest, the longest time for complete cessation of pain having been twenty minutes. Definite changes in the ventricular complexes of the electrocardiograms were demonstrated. These changes resembled those produced by coronary thrombosis. They are not always present, owing no doubt to "silent areas" in the myocardium, changes that do not affect the electrocardiogram. The author states that the positive evidence adduced in the foregoing cases and in those previously reported points toward the coronary origin of anginal pain.

Indian Medical Gazette, Calcutta

69: 181-240 (April) 1934

Megacolon and Its Treatment by Sympathectomy. D. C. Chakrabarti. —p. 181.
Acute Perforation and Hematemesis in Duodenal Ulcer. P. N. Ray. —p. 183.
Voelcker's Method of Extraperitonealization of the Urinary Bladder: Its Usefulness in Operations for Pathologic Conditions of the Bladder and the Ureters. V. M. Kaikini.—p. 185.
Hernias of the Large Intestine, with Especial Reference to Sliding Hernias. S. Dayal.—p. 188.
Notes and Observations on Infantile Biliary Cirrhosis. N. G. Pandalai. —p. 190.
Studies on Action of Quinine in Monkey Malaria. R. N. Chopra and B. M. Das Gupta.—p. 195.
Place of Treatment in an Antimalarial Campaign. W. B. McQueen. —p. 204.
*Nine Cases of Human Gnathostomiasis. C. Prommas and S. Daengsvang. —p. 207.
Bored-Hole Latrines in the Health Unit, Partabgarh. K. Prasada. —p. 211.
Toxic Effects Produced by Combined Treatment with Atabrine and Plasmochin. R. N. Chopra and A. K. M. A. Wahed.—p. 213.
Calcareous Degeneration in a Uterine Fibroma. S. Mozumdar.—p. 214.
Cerebral Type of Malaria Lighted Up by Sudden Shock. C. Lahiri. —p. 214.

Human Gnathostomiasis.—Prommas and Daengsvang add nine cases of human gnathostomiasis to the twelve cases reported previously. They have seen twenty cases clinically diagnosed as gnathostome infestation, one of which was confirmed by extraction of a worm by the patient from the buccal mucosa after suffering from facial swelling for about one week; but unfortunately the patient had thrown the worm away. The disease is apparently confined to oriental countries and is especially common in Siam. It occurs in both sexes at any age (20 to 57 years). The disease is characterized by a migrating intermittent swelling of varying size, which is usually painless, but on certain occasions is more or less itchy and painful. Pain, if present, is boring or biting in character and in rare cases is severe enough to disturb sleep. The swellings did not show pitting on pressure and underwent suppuration in two cases only, probably on account of secondary infection. The regional lymph nodes are not involved, unless there is added bacterial infection. There is no definite anatomic distribution of the lesions; they are found on the abdominal wall, chest, shoulders, face, hands and feet. In one instance the parasite simulated mastoiditis (Datta and Maplestone, 1930), and in one of the authors' cases it presumably pierced through the tracheal wall, producing hemoptysis. As a rule the blood picture shows eosinophilia of varying degree, but this is not a pathognomonic feature, since it occurs in many other tropical diseases. Though nothing is known with certainty regarding the mode of infection and transmission of the parasite, recently the authors (1933) discovered the development of its larval form in a cyclops and are carrying on experiments. Of the many methods of treatment tried, none apparently surpass surgical intervention.

Journal of Anatomy, London

68: 289-432 (April) 1934

Mechanism Controlling the Growth in Length of the Long Bones. H. Selye.—p. 289.
Innervation of Extrinsic Ocular Muscles. A. A. Tarkhan.—p. 293.
The Development of a Medial Motor Nucleus and an Accessory Abducens Nucleus in the Pig. R. F. Shaner.—p. 314.
Ganglions of the Internal Carotid Plexus. A. Gellért.—p. 318.
Contrasting Types of Australian Skulls. F. Wood-Jones.—p. 323.
Variations in the Lower End of Femur from Indians. M. A. H. Siddiqi.—p. 331.
Further Observations on the Venae Cavae of Certain Mammals. K. J. Franklin.—p. 338.
Abnormality in the Venous System of the Common Frog (Rana Temporaria): Case. A. J. Grove and G. E. Newell.—p. 341.
Sternal Gland of Myrmecobius: Note. E. Ford.—p. 346.
Megaloduodenum with Various Vascular Abnormalities: Case. Alfreda H. Baker and J. Kirk.—p. 350.
Persistent Thyroglossal Duct in a Rabbit. R. K. Pal.—p. 354.
Displaced and Malformed Kidney: Case. M. N. De and S. C. Sinha. —p. 357.
Concerning the Course of the Laterosensory Canals in Recent Fishes, Pretishes and Necturus. E. P. Allis Jr.—p. 361.

Journal of Laryngology and Otology, London

49: 297-356 (May) 1934

Recent Advances in the Treatment of Carcinoma of the Esophagus from the Surgical Aspect. G. Turner.—p. 297.
*Carcinoma of the Esophagus Treated by Radiation. F. J. Cleminson and J. P. Monkhouse.—p. 313.
*Further Observations on the Sphenopalatine Ganglion. D. Stewart and V. Lambert.—p. 319.

Carcinoma of the Esophagus Treated by Radiation.—Cleminson and Monkhouse treated eighty-nine cases of carcinoma of the esophagus with radiation but the results were so disappointing that they wonder whether it is not actually harmful to treat these patients by the application of radon to the center of the growth and whether they might not live longer if their only treatment was a preliminary removal of all teeth, followed by a gastrostomy. These patients do not seek advice until peripheral extension and early metastasis have made it impossible for radiation to reach the outlying parts of the growth with destructive strength. The suspicion arises that there may even be a certain danger of stimulation of the rate of growth at the periphery and that thus the end may be hastened rather than delayed. The average period of survival for the whole series was 5.6 months (for growths in the upper part 6.7 months, in the middle part 5.4 months and in the lower part 6.9 months). For the ten women it was 8.5 and for the seventy-nine men it was 5.2 months. The relation of history to the survival period suggests that a short history does not necessarily indicate that the case is more recent in the sense of being less advanced and so more amenable to treatment than one in which the history is longer. This suggestion is confirmed by a study of the survival times of patients grouped according to length of history.

Observations on the Sphenopalatine Ganglion.—Stewart and Lambert state that cocainization of the foramen is a quick and efficient method of producing temporary anesthesia of the nasal cavity. Afferent impulses from local lesions in the superior division of the fifth nerve may be blocked by a local

application to the sphenopalatine foramen. As a result of this, painful conditions in this region which produce referred pains at a distance can be controlled. The latter fact accounts for the control thus exercised over the pains in the ear, neck and shoulder. As the afferent path of the nasopulmonary reflex demonstrated by Brodie and Dixon is abolished by cocainization in this region, it is reasonable to expect that certain cases of reflex spasmodic asthma will be controlled in the paroxysms. The authors cannot find any evidence to support the view that there are afferent sympathetic fibers present in the nerves.

Lancet, London

1: 931-986 (May 5) 1934

The Hormones and Their Chemical Relations. E. C. Dodds.—p. 931.
International Cooperation in Public Health: Its Achievements and Prospects. G. S. Buchanan.—p. 935.
*Therapeutic Action of Prostigmine. E. A. Carmichael, F. R. Fraser, D. McKelvey and D. P. D. Wilkie.—p. 942.
*Acute Perforation of Peptic Ulcers. T. G. I. James and N. M. Matheson.—p. 945.
Diabetes Mellitus in Children. L. Cole.—p. 947.

1: 987-1042 (May 12) 1934

Hormones and Their Chemical Relations. E. C. Dodds.—p. 987.
International Cooperation in Public Health: Its Achievements and Prospects. G. S. Buchanan.—p. 992.
Hey's Dislocation. J. W. Riddoch.—p. 997.
Diabetes Mellitus in Children. L. Cole.—p. 998.
Pleuropulmonary Perforations: Use of Gas Analysis in Their Diagnosis. C. A. Birch.—p. 1002.
Percentage of Fat in Human Milk: Influence of the Method of Extraction. Margaret Frances Lowenfeld, Sibyl Taite Widdows and Hazel H. Chodak Gregory.—p. 1003.

Therapeutic Action of Prostigmine.—Carmichael and his associates observed the action of dimethyl carbamic ester of 3-oxyphenyl-trimethyl-ammonium-methyl sulphate (prostigmine) in forty-one patients. It was administered by subcutaneous or intramuscular injection of the solution provided in ampules by the manufacturers. Thirteen of the patients were selected from among ordinary hospital patients, because they presented no special lesion of the digestive tract that would interfere with observations on the action of the drug under approximately normal conditions. In twenty-eight instances, patients were selected because the action claimed was desired, and in sixteen of these postoperative intestinal distention was present. It was observed that the subcutaneous or intramuscular injection of the drug produces active movements (contractions and relaxations) in the colon in normal subjects, but there is no evidence that these movements are such as to produce the forward passage of the contents of the colon. Considerable variation was seen in the intensity of the response of different subjects. The drug appears to be free from side actions on the rate of the heart and blood pressure when given in doses at least double the recommended dose. In from ten to twenty minutes following its injection, abdominal pains and rumblings occur in cases of gaseous distention of the intestine and these go on for almost thirty minutes. It is necessary to give an enema to get a satisfactory passage of flatus. The authors suggest that the drug, followed by solution of pituitary and then an enema, may be an effective measure for stimulating peristalsis in postoperative distention.

Acute Perforation of Peptic Ulcers.—The observations of James and Matheson of seventy-five cases of perforated gastric and duodenal ulcers revealed that subphrenic and pelvic abscesses are the result of delay. Intestinal obstruction has been encountered on two occasions and occurred round the site of the drainage tube necessitated by gross peritoneal soiling. The occurrence of hemorrhage from a second ulcer led to a fatal termination in two cases on the tenth and twenty-fourth postoperative days, respectively. In each case the perforation had occurred in the duodenum, and the bleeding was shown at necropsy to have its origin in an unsuspected gastric ulcer—in one case eroding the splenic artery. The possibility of this occurrence indicates the desirability of searching for other ulcers at the time of operation and stresses the need for prolonged and thorough after-treatment. It is often stated that bleeding ulcers do not perforate and that perforating ulcers do not bleed, but the authors have seen this association in two cases. In one the perforation followed immediately on a hematemesis and in another profuse bleeding occurred from an ulcer high on the lesser curve which had been sutured ten days before.

Practitioner, London

132: 529-640 (May) 1934

Some Common Ocular Symptoms. W. J. Adie.—p. 529.
Squint and Its Treatment. N. B. Harman.—p. 539.
Treatment of Conjunctivitis. P. G. Doyne.—p. 551.
Causation and Operative Treatment of Detachment of the Retina. J. C. Marshall.—p. 562.
Glaucoma. H. B. Stallard.—p. 573.
Some Minor Cardiac Affections. R. O. Moon.—p. 587.
Modern Treatment of Carcinoma of the Breast. D. C. L. Fitzwilliams.—p. 596.
*Massive Diffuse Hypertrophy of the Breasts in Girls: Report of Four Cases. C. P. G. Wakeley.—p. 608.
*Nasal Treatment of Hay Fever. C. Francis.—p. 614.
Medicolegal Problems in General Practice: V. Diagnosis of Intoxication by Alcohol and Drugs. A. Baldie.—p. 619.

Massive Diffuse Hypertrophy of Breasts in Girls.—Wakeley reports four cases of hypertrophy of the breasts and states that, although numerous partial amputations have been advocated from time to time, such operations should be condemned, as they leave behind a mass of pathologic material which is later a source of trouble to the patient. To attempt transplantation of the enlarged and attenuated nipple to the upper part of the breast has nothing to recommend it, for the nipple is so stretched and flattened that it has lost all its contractile tissue. If the hypertrophy was a simple overgrowth of the fat and fibrous stroma without any alteration of the glandular tissue, a partial removal might be considered. This, however, is not the case, as the gland substance participates in the hypertrophy and sometimes adenomas are found as well. These conditions seem to justify the removal of the whole of these useless, functionless and frequently painful breasts. The best method of removing the breasts is by transverse elliptic incisions, which are united to form a transverse scar. Bleeding can be controlled by making the upper part of the elliptic incision first. The main vessels are exposed and clamped, and when the lower part of the incision is made there is practically no bleeding. Shock is not encountered if the bleeding is minimal during the operation. Transverse wounds over the chest heal well and are not subject to keloid formation. The etiology of diffuse hypertrophy of the breasts in girls remains obscure, but there is probably some upset in the endocrine balance, as shown in the change of the clinical picture after their removal. The condition is in no way like a true elephantiasis.

Nasal Treatment of Hay Fever.—Francis describes a treatment of hay fever by light intranasal cauterization. The procedure is as follows: A small swab of absorbent cotton is twisted on the end of a probe, dipped in a 10 per cent solution of cocaine hydrochloride and wrung out almost dry. The interior of the nose is examined, and the septum and the inferior and middle turbinates are touched lightly in rotation with the swab. The most sensitive areas are anesthetized by painting them three or four times with the solution. The areas should be touched lightly with a fine cautery point heated to a dull red, the heat being turned off just before the cautery point is applied. One or more light longitudinal burns should be made, when necessary, on the septum and inferior turbinate, and a few light touches on the anterior edge of the middle turbinate. The marks produced by the cautery should be nearly or entirely gone in a week or ten days. If necessary a second application is made to any remaining hypersensitive areas. There is no pain, swelling of the parts or sloughing, and no after-treatment is required. Of the author's 100 patients treated in this way, seventy-four patients obtained complete or great relief, moderate relief was evident in twenty-two and four patients obtained either slight relief or none.

Japanese Journal of Experimental Medicine, Tokyo

12: 1-104 (Feb. 20) 1934

Experimental Diphtheria Paralysis and Its Causes. S. Hosoya, E. Ozawa and T. Tanaka.—p. 1.
Studies on Botulinum Toxin: First Report. S. Tani.—p. 9.
Id.: Second Report. Toxin Produced in Biuret-Free Mediums and Its Characteristics. S. Tani.—p. 33.
Influence of Parenteral Introduction of Liver Cell Constituents on Blood Gas: III. Influence of Liver Cell Constituents on Artificial Acidosis. N. Owada.—p. 49.
Id.: IV. Influence of Liver Cell Constituents on Artificial Alkalosis. N. Owada.—p. 77.
New Method of Staining Viruses of Variolo Vaccinia and Varicella, and the Nature of Cell Inclusions in Virus Diseases. T. Taniguchi, M. Hosokawa, S. Kuga and T. Fujino.—p. 91.
Virus of Herpes and Zoster. T. Taniguchi, M. Hosokawa, S. Kuga and Z. Masuda.—p. 101.

Annales de Médecine, Paris

35: 325-412 (May) 1934

Periodic Accidents in Course of Tuberculosis. R. Burnand.—p. 325.
Clinical Spirometry: Testing Dyspnea Produced in Closed Space. R. Goiffon, R. Parent and J. Waitz.—p. 362.
*Significance of Testing for Carbohydrates, Especially Galactose, in Functional Examination of Liver. I. Pavel, I. Florian and I. Radvan.—p. 380.

Carbohydrates in Functional Examination of Liver.—Pavel and his collaborators studied seventeen patients having benign infectious jaundice to decide whether the insufficient galactose utilization of the liver is not due in part to insufficient insulin secretion. They attempted to observe the influence of insulin administration on galactose elimination in cases of catarrhal jaundice with positive galactosuria. In three cases studied they found the galactosuria influenced by insulin. The apparent deficiency of the insulin producing apparatus of the pancreas in catarrhal jaundice was corroborated by the insulin resistance of these patients. They also examined the condition of the pancreas in seventeen cases of infectious jaundice by measuring the lipasic activity of the pancreatic secretion produced by milk and by measuring the urinary diastase. In fifteen of the seventeen cases they found a functional deficiency of the pancreas. This series of cases showed clinically similar syndromes but the cause was certainly not constant. Eleven patients had hypertrophic cirrhosis and six an atrophic cirrhosis. In nine of the eleven cases of hypertrophic cirrhosis the authors studied the lipasic activity of the secretion produced by the pancreatic substance, and the urinary diastase. In two cases they observed the urinary diastase alone. In the group of nine cases they found the two tests of pancreatic insufficiency positive five times. In the second group of two cases they found an increase of urinary diastase once, which corresponded to a pancreatic edema confirmed by necropsy. In the other observations the urinary diastase was diminished. A parallelism existed: alimentary glycosuria was positive in the cases in which the pancreatic tests were positive and galactosuria was negative when pancreatic tests had been found normal and anatomic examinations confirmed the integrity of the pancreas. Less definite were the observations in the six cases of atrophic cirrhosis. In one case the two tests were positive; in two a single test (duodenal lipase) was positive, and in three the tests were normal. Thus the results of clinical research seem to show that the functional state of the pancreatic external secretion is almost constantly affected in catarrhal jaundice, and often in the cirrhoses.

Archives des Maladies de l'Appareil Digestif, Paris

24: 337-448 (April) 1934

Generalized Lymphosarcomatous Lymphangitis of Stomach: Contribution to Study of Gastric Sarcoma. A. Cain, P. Hillemand and J. Mézard.—p. 337.
*Periduodenitis of Appendicular Origin: Clinical and Roentgenologic Diagnosis. S. Kadrnka and P. Bardet.—p. 354.
*Argentaffine Tumors of Appendix. P. Topa, E. C. Craciun and D. Caramzulescu.—p. 392.

Periduodenitis of Appendicular Origin.—Kadrnka and Bardet found that periduodenitis of appendicular origin is more frequent than usually supposed. It is more frequent, in fact, than postcalculous or postulcerous periduodenitis and is generally found in young adults. So-called essential periduodenitis must be considered only after the exclusion of disorders both near and far and especially appendicitis, even when apparently clinically cured. In such instances histologic evidence of the remains of an old appendicitis is necessary. Periduodenitis of appendicular origin generally involves the proximal part of the first portion of the duodenum and by choice the lesser curvature of the bulb. It is also frequently localized at the level of the third part in the region of the neck of the mesentery, thus producing a mesocolic form which is characterized by a nonreducible stenosis. In practice, appendicular periduodenitis forms two groups: that in which the dyspepsia is accompanied by the appendicular syndrome, and that in which it is not. In the first form roentgenography is largely responsible for the pathologic diagnosis. In the second group clinical diagnosis is especially difficult. The authors feel that treatment should be directed both toward operative freeing of the duodenal adhesions and removing of the primary focus, i. e., the appendix. Although good results sometimes follow appendectomy alone, a second operation is often necessary, and it seems desirable to perform the two procedures at the same time rather than run the risk of a second operation. They conclude that in view of the numerous early and late complications of appendicitis it is wise to remove this organ at the first sign of involvement and even better to remove a normal appendix than chance the complications of which periduodenitis is only one.

Argentaffine Tumors of Appendix.—Two cases of primary tumor of the appendix are reported by Topa and his collaborators. In both instances the histologic arrangement of the cells of the stroma was more similar to that of a trabecular stomach cancer than to that of a benign process. In both instances there was an affinity of the tumor tissue for ammoniacal silver. The authors believe that appendicular neoplasms are practically always a complication of chronic inflammation. It is apparently justifiable to admit three kinds of epithelial cancer of the appendix. The first is the argentaffine epithelioma derived from the so-called Kultchitsky-Schmidt-Ciaccio cells. The second group is the simple epithelioma developed from the cells common to the epithelial lining and glandular crypts. Finally there is the mucocele (a benign tumor), which may develop from the muciparous cells. In the particular tumors cited in this paper diagnosis as to malignancy is difficult. The histologic structure and argentaffine nature of the tumors favor an attenuated cancer while the extreme rarity of postoperative recurrence is in favor of their benign nature.

Bruxelles-Médical, Brussels

14: 863-887 (May 6) 1934

*Postinfluenzal Tracheobronchial Adenopathies of Secondary Infancy. G. Ruelle.—p. 863.
Dental Manifestations of Hereditary Syphilis. Vais.—p. 868.
Placental Retention: Case. J. Volperts.—p. 876.

Postinfluenzal Adenopathies of Infancy.—Ruelle discusses a group of children who develop tracheobronchial adenopathy subsequent to grip. He concludes that a hilus syndrome of nontuberculous nature exists which occurs after numerous infections, such as measles, whooping cough, syphilis and influenza. The principal cause appears to be a rhinopharyngitis. This condition has a double pathologic effect. It plays a mechanical part in narrowing the upper respiratory passages and creates a respiratory insufficiency. It plays also an infectious part by means of the mucopus either nearby or at a distance. It is not safe to diagnose tuberculosis lightly in the face of a continued fever. One cannot ignore the bad effects of rhinopharyngitis. If the latter is acute it is easily recognized; if subacute, it may create a fever lasting weeks or months or with episodes of fever for several months. This type of adenopathy serves as one of the therapeutic triumphs of arsenic. Iodides and sometimes sulphur are valuable accessories. A final sojourn at the seashore completes the results obtained by medicaments. If this is impossible, ultraviolet rays are helpful.

Presse Médicale, Paris

42: 641-664 (April 21) 1934

Clinical and Roentgenologic Study of Syphilitic Gummas of Lung. E. Sergent, E. Piot and J. Imbert.—p. 641.
Voluminous Extracranial Hematoma Following Probable Rupture of Lateral Sinus. C. Lenormant and H. Mayet.—p. 644.
*Esophageal Sequelae of Intoxications by War Gases: Pathogenesis of Dilatations of Esophagus. G. Worms and J. Leroux-Robert.—p. 646.
*Pseudohypophyseal Infundibulo Tuberian Syndrome. J. Lhermitte and P. Pagniez.—p. 649.
Endoscopic Study of Gastro-Enterostomy. F. Moutier.—p. 653.
Growth of Connective and Osseous Tissue Cultivated in Vitro in Presence of Certain Metals: Biologic Study of Osteosynthesis. G. Menegaux, P. Moÿse and D. Odiette.—p. 658.

Esophageal Sequelae of War Gassing.—Worms and Leroux-Robert illustrate by cases several forms of esophageal involvement resulting from gas intoxication. In one case there was enormous esophageal dilatation which took only twelve or fourteen months to develop. In another, in spite of only mild cardiac stenosis, ectasia of the esophagus existed, thus showing the accessory nature of cardiospasm. In a third case, massive dilatation of the esophagus existed in the absence of any stenosis of the cardia. Two other patients showed marked cardiac stenosis with gradual dilation. The authors believe

that these observations suggest that the dilatation is the primary phenomenon and that the stenosis plays only a secondary rôle in its development. They are inclined to attribute the primary ectasia to a toxic change of the parietal nervous system. The toxin has an elective action on the nervous system and can determine at what level of the esophagus dilatation will occur. Thus stenosis of the cardia of toxic, infectious, or inflammatory origin can produce esophageal dilatation due to the weakened wall, but this stenosis, while common, is a secondary phenomenon, inconstant, and not absolutely necessary to the development of the ectasia.

Infundibulo Tuberian Syndrome.—Lhermitte and Pagniez describe the case of a woman who in infancy had had poliomyelitis and an encephalitis of indeterminate nature. At the age of 40, a facial paralysis with crossed hemiplegia appeared, followed two years later by a diabetic syndrome (polyuria, polydipsia, glycosuria and hyperglycemia) with an increase of obesity, menstrual difficulties and epileptiform attacks. The roentgenogram showing enlargement of the sella turcica added to the impression that the cause was a hypophyseal lesion. This hypothesis was proved false by anatomic studies which were made possible by the development of a fatal apoplexy. The hypophysis and sella turcica were entirely normal while the hypothalamic center appeared grossly altered by an infectious process. Not only did the basal leptomeninges show a dilatation of the vessels but the walls of the vessels were also infiltrated by lymphocytes and plasma cells. The quality and intensity of the process became more evident when the region from the terminal lamina to the peduncle was examined. From a topographic point of view this cellular infiltration developed in an elective manner from the terminal lamina to the peduncle, but, although it was marked deeply in the gray substance, it was practically completely absent in the white substance. In the latter, some vessels surrounded by a collar of mononuclear cells were the only changes. It is apparent from this case that the differentiation of some conditions, which seem to be of hypophyseal origin, from morbid processes of the infundibulo tuber cinereum region is difficult but should be attempted.

Schweizerische medizinische Wochenschrift, Basel

64: 501-524 (June 2) 1934

*Value of Sour and Dry Milks for Healthy Nurslings and for Those with Nutritional Disturbances. E. Feer.—p. 501.
Clinical Aspects and Therapy of Myelodysplasia. J. Ratner.—p. 505.
External Female Pseudohermaphroditism: Case. G. Monsch.—p. 509.
Critical Remarks About Selection of Laparotomy Incisions. E. Orbach.—p. 512.
*Cutireaction with Diphtheria Toxin: Attempt at Simplification of Schick Test. T. Reh.—p. 513.
Liver and Chronic Rheumatism: Vichy Cure. P. Vauthey and M. Vauthey.—p. 514.

Sour and Dry Milks in Feeding of Nurslings.—Feer says that research has revealed that the addition of organic acids, such as lactic and citric acid, to cow's milk makes up largely for its disadvantages compared to human milk. He considers buttermilk the most valuable of the sour milks in the feeding of nurslings. It is particularly useful in feeding premature infants and infants with dyspepsia and fat intolerance. Excessive acidification may cause diarrhea. The low fat content makes buttermilk alone unsuitable for long periods, but additions of butter, flour and sugar compensate for this. In evaluating lactic acid whole milk, the author states that it is valuable in the so-called two-milk nutrition. In nurslings, aged 4 weeks, it can already be used to supply two thirds of the food requirements in addition to one third of human milk, and eventually it even may be given as the only food. Since this milk has a high food value, the mother must be told not to exceed the prescribed quantities. In acute toxic dyspepsia, lactic acid whole milk is inadvisable, at least in the beginning stage. In the treatment of enteritis and dysentery, lactic acid whole milk is of great value, having an almost specific effect. It has proved of great aid in dystrophy, atrophy, pyloric stenosis, whenever there is a lack of appetite, and in many infectious diseases. Citric acid whole milk may be used in the same manner as lactic acid whole milk. Other sour milks evaluated by the author are protein milk, yoghurt and kefir. He considers the dry milks good substitutes for fresh milk when it is difficult to obtain. The fat-containing dry milks are helpful in preparing concentrated foods. If dry milks have to be used for longer periods, it is necessary to guard against vitamin deficiency by giving fresh fruit juices.

Simplification of Schick Test.—For years Reh has made efforts to simplify the Schick test and to develop a cutireaction with diphtheria toxin. His first experiments, in which he employed the usual toxin, failed. However, Ramon produced toxins with high antigenic value, with which Reh has perfected a technic that permitted a "pirquetization" of the Schick test. Following experiments on guinea-pigs he tried it on children. The toxin was obtained from the Pasteur Institute and it was always controlled pure and diluted, heated and unheated for its cutireactivity on guinea-pigs. Two intracutaneous insertions are made into one arm and to one is applied heated toxin and to the other one unheated toxin. On the other arm a control Schick test is made. The cutireaction appears, as a rule, after forty-eight hours and attains its maximum between the second and fourth days. It does not cause local pain or general reaction. Its intensity is variable just as in the Pirquet reaction. On the basis of observations made in ninety-six cases the author concludes that, with rare exceptions, the cutireaction gives the same results as the Schick reaction. The technic is simple: by means of a vaccinostyle two scarifications are made on the forearm and on one of them a drop of toxin with 30 units of antigen is applied with a glass rod or with a drop-bottle and allowed to dry.

Riforma Medica, Naples

50: 597-636 (April 21) 1934

Massive Gastro-Intestinal Hemorrhages in Relation to Ulcer of Stomach and Duodenum. N. Leotta.—p. 599.
*Origin and Hepatic Treatment of Exfoliative Arsphenamine Dermatitis. G. Zolezzi.—p. 609.
High Ileac Retrograde Invagination Resulting from Tumor in Child. A. Cioffi.—p. 612.

Exfoliative Arsphenamine Dermatitis.—Zolezzi describes two cases presenting exfoliative dermatitis due to arsphenamine. He found a deficiency in the hepatic function of both patients. He emphasizes the importance of the functional activity of the liver in the course of arsphenamine treatment. The relation of grave cutaneous manifestations to the condition of the liver may in some cases be established by clinical examination, in others only by functional examination of the organ. The two patients responded well to intramuscular injections of various liver extracts. These extracts overcome the effect of the hepatic deficiency, in the absence of which arsphenamine dermatitis does not occur.

Rivista di Malariologia, Rome

13: 1-120 (No. 1) 1934

Hematic Conditions of Malarial Population of Hyperendemic Zone in Relation to Acquired Immunity. A. Corradetti.—p. 1.
Hemoglobinuria in Malaria. U. Peratoner.—p. 58.
*Variations of Lactic Acid Content of Blood in Chronic Malaria. M. P. Demurtas.—p. 66.
Acute Nephritis in Malarial Infection. D. Ceccarelli.—p. 81.
Presence in Italy of Plasmodium Tenue and of Plasmodium Circumflexum. A. Giovannola.—p. 92.
Winter Malaria in Corsica: Its Relation to Variety of Anopheles Maculipennis. J. Sautet.—p. 97.
Contribution to Biogeography of Malaria in Burhacaba (Benadir). C. Tedeschi and A. Scalas.—p. 104.
Staining of Malarial Parasites. F. Jerace.—p. 114.

Lactic Acid Content of Blood in Chronic Malaria.—Demurtas states that the lactic acid content of the blood of normal persons fluctuates between 11 and 14 mg. per hundred cubic centimeters. In studying eleven patients presenting chronic malaria, he found that the rate of lactic acid shows a marked and constant increase. Many investigators attribute this increase to symptoms of autophagia or to an abnormal passage of portal blood through the liver into the hepatic vein. The author maintains, however, that this lacticemia indicates a deviation in the function of the liver. It is his belief that an abnormal quantity of lactic acid is thrown into the circulation because the specific synthetic action of the liver is lacking, owing to some alteration of the hepatic cells. Malarial infection always produces alterations of the hepatic parenchyma, such as fatty degeneration, pigment infiltration and necrosis of the cells. These alterations are not always demonstrable by clinical examination or laboratory investigation, but they are by a systematic study of the lac-

ticemia. The change in function may be demonstrated many years after disappearance of the febrile attacks, of evolutive manifestations and of progressing malarial infection.

Archivos de Medicina, Cirugía y Espec., Madrid

37: 473-500 (May 5) 1934

Sahlgren's Agglutination Test in Pulmonary Tuberculosis. L. González Rubio and R. Luelmo y Luelmo.—p. 473.
*Ovarian Hypofunction in Etiology of Diabetes. E. Arias Vallejo.—p. 475.
New Method for Roentgen Examination of Liver and Spleen. P. Beltrán de Heredia.—p. 482.

Ovarian Hypofunction in Etiology of Diabetes.—Arias Vallejo says that of all endocrine glands which, associated with insular lesions of the pancreas, take part in the development of diabetes, the ovary has the most important etiologic rôle. Of the diabetic women observed by the author, 86 per cent had ovarian hypofunction. Diabetes originated from a pathologic ovarian insufficiency, surgical ablation of one or both ovaries or roentgen castration (15 per cent). Eight of the patients were vagotonic. The injection of an extract of total ovary or of pilocarpine chloride produced a decrease in the glycemia, marked within an hour after the injection, but followed by a return to the initial values about an hour and a half after the injection. The results obtained by the author indicate that glycemia decreases under the influence of insulin secretion produced by stimulation of the parasympathetic by the ovarian hormones. They also show the advantages of giving ovarian treatments to diabetic patients whose diabetes follows insufficiency of the genito-endocrine glands.

Lisboa Médica

11: 257-330 (April) 1934

*Kala-Azar and Malaria: Case. Cordeiro Ferreira.—p. 257.
Alkali Reserve in Dystrophic Infants. C. Salazar de Sousa.—p. 267.
Prevention of Venereal Diseases. E. Faro.—p. 276.
Abnormal Left Ureter and Urinary Incontinence. M. Conde.—p. 303.

Kala-Azar Coexisting with Malaria.—Cordeiro Ferreira reports a case of infantile kala-azar coexisting with malaria, which is extremely rare. Kala-azar and malaria, when associated in the same patient, do not exercise any reciprocal influence on each other. The patient shows clinical and hematologic symptoms of both infections. The malarial parasites are found in the peripheral blood of these children. The diagnosis of the coexisting kala-azar can be made only by means of the parasitologic examination of the blood of the spleen obtained by puncture. Reports have appeared in the literature with the statement that quinine treatment produces a harmful effect on kala-azar. In the author's case quinine produced a cure of malaria without aggravating the coexisting kala-azar, which in turn followed a favorable evolution to recovery when the patient was treated with an antimony preparation. In the author's case the splenomegaly disappeared slowly after the hematologic cure of the infection, as happens in all cases of kala-azar.

Archiv für Kinderheilkunde, Stuttgart

102: 65-128 (May 25) 1934

Dysentery During Nursling Age. E. Hainiss.—p. 65.
*Etiology of Dysentery in Nurslings. Z. Teveli.—p. 79.
Treatment of Enuresis. J. Siegl and H. Asperger.—p. 88.
*Elimination of Chlorine in Acute Hepatitis During Nursling Age. G. Török and L. Neufeld.—p. 102.
Advantages and Disadvantages of Therapeutic Use of Garlic During Childhood with Especial Consideration of Celiac Disease. E. Mayerhofer.—p. 106.

Etiology of Dysentery in Nurslings.—Teveli succeeded in demonstrating a bacillus of the dysentery group in forty-six out of fifty nurslings with primary purulent and sanguineous enteritis; that is, in 92 per cent. These bacteriologic investigations prove the assumption, which so far has been based only on epidemiologic observations, that all forms of colitis and of enteritis in which the stools are mucopurulent or sanguineous and purulent, and in which influenza, typhoid and paratyphoid can be ruled out, may be considered bacillary dysentery. The author thinks that the rôle of intestinal streptococci and of coli, Proteus or pyocyaneus bacilli is doubtful.

Elimination of Chloride in Acute Hepatitis in Nurslings.—Török and Neufeld studied an epidemic of hepatitis in a group of children. They conclude that the determination of the sodium chloride content of the urine, at least during childhood, is unsuitable for the detection of a hepatic lesion, because in acute hepatitis the chloride elimination is just as much dependent on the chloride content of the food as is the case in normal children. Observations by other investigators indicate that the infant is capable of storing only slight quantities of sodium chloride. It appears that in some pathologic conditions in which the chloride retention of the tissues is increased in adults the infant maintains its characteristic low chloride retention capacity. The authors think that this difference may be due to hormone factors.

Deutsche Zeitschrift für Chirurgie, Berlin

243: 225-376 (May 14) 1934. Partial Index

*Shock, Collapse and Electrosurgery. F. Schörcher.—p. 225.
Muscle Incision and Neurotization. H. von Seemen.—p. 274.
Relationship Between Injuries to Intervertebral Disks and Spondylosis Deformans in Animal Experiments. A. Loh.—p. 283.
Effect of Tissue Damage on Development of Neoplasms. H. Lützeler.—p. 310.
Use of Short Wave Diathermy in Surgery. M. Haas and A. Loh.—p. 318.
State of Circulation in Collapsed and Normal Lung. H. May.—p. 341.

Shock, Collapse and Electrosurgery.—Schörcher defines shock as a clinical state resulting from a sudden trauma of the nervous elements influencing the central nervous system by way of the reflex arc. It is accompanied by a rise in the blood pressure, followed later by a fall. Collapse, on the other hand, while clinically similar to shock, differs from it causally in that it is the result of a chemical action. It is caused by the absorption of toxic substances and their effect primarily on the circulatory system. It is slower in development and is characterized by a primary fall in the blood pressure. The author conducted studies of the circulation in rabbits and dogs in a state of experimental shock. Shock was induced by traumatization of the skin and the muscles, by trauma of the nerves and the vessels of the peritoneum and by procedures on the spinal cord and the internal viscera, especially the kidneys, the testicles and the uterus. He found that the circulatory system did not always react in the same manner. Not infrequently the fall in the blood pressure and the slowing of the pulse preceded the rise in the blood pressure and the acceleration of the pulse. As a rule, however, the fall in the blood pressure was secondary to an initial rise. The blood pressure fell, as a rule, in abdominal operations. The same experiments were performed in rabbits in which both hemispheres were removed as well as in animals in which the spinal cord was severed at the level of the neck. The effect was identical. The severing of both vagi did not change the effect. When the area to be traumatized was anesthetized by infiltration, no shock or any evidence of circulatory disturbance was noted. The author further found that trauma of an electrosurgical procedure produced less shock than that produced by ordinary mechanical means. In his studies on collapse the author showed that the so-called rapid toxins of the defibrinated blood are not identical with adenosinphosphoric acid of the muscle, because the latter does not lose its effect when boiled, while the former loses its toxicity when heated to 59 C. He further found that in contradistinction to the juice of a fresh muscle, that obtained from an electrocoagulated muscle did not cause death when injected into the ear vein of a rabbit. It is possible that the rapidly working toxins affect the lesser circulation and the splanchnic area first and the central nervous system secondarily. Electrocoagulation destroys the toxicity of the rapidly working toxins because it generates a temperature of from 60 to 80 degrees, whereas their activity is inhibited at 59 degrees of heat. The autolysates of expressed muscle juice when injected into the ear vein of a rabbit caused death in smaller doses than that of the rapidly working toxins. The author found that autolysates from an electrocoagulated muscle were less toxic. Comparative studies of growth of bacteria (Staphylococcus pyogenes-aureus) on raw, boiled and electrocoagulated muscle showed that they grew more slowly and in smaller numbers on the electrocoagulated muscle. The author believes that he demonstrated in experiments that electrosurgical trauma produces little reaction on the part of the nervous and circulatory systems.

Jahrbuch für Kinderheilkunde, Berlin

142: 255-318 (May) 1934

Aspects of Grave, Familial Icterus. Cornelia de Lange.—p. 255.
Whooping Cough and Tuberculosis. E. Gabriel.—p. 281.
*Diastase in Cerebrospinal Fluid in Poliomyelitis. F. Eckardt.—p. 303.

Diastase in Cerebrospinal Fluid in Poliomyelitis.—Studies on the behavior of diastase in the cerebrospinal fluid of patients with poliomyelitis revealed to Eckardt that the inflammatory processes which develop in the central nervous system of these patients cause an increase in the diastase content of the cerebrospinal fluid. In the severe cases the diastase content generally exceeds 50 mg. per hundred cubic centimeters, while in the mild cases the values are usually near the upper limits of the normal content namely, around 50 mg. per hundred cubic centimeters. The comparatively slight increase in cells, together with a great increase in the diastase content, proves that the diastase, independent of the number of cells, increases only under the stimulus of inflammatory processes in the central nervous system. With the improvement of the clinical symptoms, that is, presumably with the retrogression of the inflammatory processes in the central nervous system, the erstwhile increased diastase values decrease again. A relationship between the sugar and diastase values of the cerebrospinal fluid could not be detected in patients with poliomyelitis.

Klinische Wochenschrift, Berlin

13: 721-752 (May 19) 1934. Partial Index

Anoxemia. H. W. Knipping.—p. 721.
Relations Between Decomposition and Oxidative Decomposition of Fat. E. Freudenberg.—p. 723.
Coronary Embolism. A. Böger and G. W. Parade.—p. 724.
Protein of Plasma, Oncotic Pressure, Predisposition to Edema in Persons with Kidneys Impaired by Corrosive Mercuric Chloride. E. Róth and N. von Szent-Györgyi.—p. 726.
*Influence of Vitamins on Catalase Content of Blood. H. J. Jusatz.—p. 727.
Aspects and Treatment of Vascular Reflexes of Visceral Organs. H. Gehlen.—p. 730.
*Influence of Heparin on Epinephrine Permeability of Erythrocytes. M. Kuczarow.—p. 734.

Influence of Vitamins on Catalase Content of Blood.—According to Jusatz, the decomposition of hydrogen dioxide by the blood is a highly sensitive reaction. The clinicodiagnostic significance of this reaction, however, has been given little attention. The author found that the catalasic capacity of the blood could be employed for the experimental demonstration of the action of vitamins on the animal organism. The low catalase content in avitaminosis could be corroborated on rabbits, which for several months received practically no vitamins. The later addition to vitamin B and D to their diet produced a considerable increase in the blood catalase. The author further studied the effect of provitamin A (carotene), of vitamin A preparations and of vitamin C (ascorbic acid). He found that feeding with carrots (provitamin A) as well as the addition of vitamin A to the diet exerted no influence on the catalase content of the blood of rabbits that received an otherwise vitamin deficient diet. Vitamin C, however, administered in the form of ascorbic acid, either intravenously or orally, produced an increase in the catalase content of the blood.

Influence of Heparin on Epinephrine Permeability of Erythrocytes.—Kuczarow shows that heparin reduces the absorption capacity of the erythrocytes for epinephrine. He thinks that this condition can be explained by changes in the permeability of the erythrocytes, which develop under the influence of heparin. This assumption is explained also by the retardations in the hemolysis, which, as is well known, are a result of the changes developing on the surface of the erythrocytes, and further by the observation that foreign erythrocytes, which are laden with epinephrine and heparin, cause no increase in blood pressure after their injection into the blood stream. The latter observation may be the result of (1) an inhibition of the hemolysis of the heparinized foreign erythrocytes, (2) a reduction of the epinephrine absorption by the heparinized erythrocytes and (3) changes of the epinephrine action under the influence of heparin. The clarification of these factors requires further research.

Medizinische Klinik, Berlin

30: 693-724 (May 25) 1934. Partial Index

Treatment of Detachment of Retina. W. Stock.—p. 693.
Revision of Federal Law Regarding Vaccination. H. A. Gins.—p. 694.
Acute Insufficiency of Suprarenals in Generalized Infection Caused by Meningococcus Wichselbaum. A. Ghon.—p. 695.
*Physiologic Dose of Follicle Hormone for Women. W. Schoeller.—p. 697.
Vascular Tonus and Endocrine Glands. J. Pal.—p. 698.
Hormone Analysis in Cystic Mole and in Chorio-Epithelioma. K. Heim.—p. 700.
*Anterior Lobe of Hypophysis and Male Gonad. H. O. Neumann.—p. 702.
Relation of Suprarenals to Vitamins A, B and C. H. Schroeder.—p. 704.
Thyroidectomy and Tumor Growth. M. Reiss and J. Balint.—p. 706.

Physiologic Dose of Follicle Hormone.—In discussing the action of the follicle hormone, Schoeller points out that the synthetically obtained ester, such as the benzoate of the follicle hormone, is more effective than the crystalline follicle hormone. But organic chemistry has improved the follicle hormone preparation still more. In the course of hydrogenization experiments it proved possible to hydrogenize only the carbonyl group and not the first aromatic ring. The dihydro follicle hormone obtained in this manner is no longer an oxyketone, like the hormone, but rather a dioxy compound. However, this addition of two hydrogen atoms increased the efficacy of the hormone about five times and the dihydro follicle hormone is the most potent estrogenic substance. It was found that, in cases of ovarian insufficiency, from 200,000 to 300,000 mouse units of this hormone preparation had to be administered in the course of twenty days in order to produce the proliferation phase, and this may therefore be considered the physiologic dose. However, this number of units applies only to the preparation mentioned. The international unit agreed on in London in 1933 is 0.1 microgram (0.0001 mg.) of the ketohydroxy form of the hormone in pure crystalline condition. The fact that this unit has only one fifth of the potency of the unit mentioned brings the physiologic dose expressed in the international unit up to from one to one and one-half million units.

Anterior Lobe of Hypophysis and Male Gonad.—On the basis of his own experiences, Neumann reaches the conclusion that the hormones of the anterior lobe of the hypophysis which are extracted from pregnancy urine cannot be considered maturation hormones of the male gonad; that is, it could not be proved that they lack sex specificity. The results of other investigators support this observation. It proved impossible to influence the genitalia of hypophysectomized male rats by estrogenic substance extracted from pregnancy urine, but this was possible by means of anterior hypophyseal hormone extracted from the gland. Since gland implants and gland extracts do not produce the same results, it will be necessary to use different methods in future researches and the entirely unproved assertion of the lack of sexual specificity of the hormones of the anterior lobe of the hypophysis should be abandoned. The author reasons that, since every cell of a sexually differentiated organism is either male or female, it is logical to consider the hypophysis of a male animal the source of a specifically male secretion. It is possible that these hormones of the male anterior hypophysis are chemically related to but not identical with those of the female organism. It may even be assumed that on the basis of a bisexual disposition of all gonochorists the male anterior hypophysis produces also a small quantity of female hormone, just as the female organism contains small amounts of the male sex hormone. Future experiments should show whether hormones from the anterior hypophysis of male animals will effect maturation of the testicles of infantile animals.

Monatsschrift für Kinderheilkunde, Berlin

59: 401-496 (May 14) 1934

*Misinterpretations of Encephalograms. Elli Saamer.—p. 401.
Cystic Brain Tumor During Childhood Diagnosed by Neisser-Pollack's Cerebral Puncture. P. von Kiss and I. Fényes.—p. 411.
*Acute Poliomyelitis of Brain Stem. P. von Kiss and B. Hechst.—p. 418.
Rudimentary Form of Diaphragmatic Relaxation. M. Venschott.—p. 432.
Cure of Classic Case of Moeller-Barlow Disease by Ascorbic Acid Preparation. E. Wentzler.—p. 451.

Misinterpretation of Encephalogram.—Saamer investigated whether a forced position of the head during air inflation can cause a unilateral air distribution leading to a misinter-

pretation of the encephalogram. She cites experiments proving that a forced position of the head, particularly a maximal leaning to the side, may lead to a greater accumulation of air on one side. However, this was not always the case but was observed in four out of eight postmortem encephalographies and in two out of six living children with cerebral disorders, in whom the encephalogram was made for diagnostic purposes. Unilateral accumulations of air seem to be particularly frequent in children from 3 to 18 months of age. The author thinks that this is probably due to the greater plasticity of the brain, to the open fontanel and to the larger subarachnoidal space. The excess pressure evidently favors the unilateral accumulation of air. The author concludes from these observations that during encephalography a vertical position of the head should be insisted on. If this position of the head cannot be maintained during air inflation, caution is necessary in interpreting an increased accumulation of air on one side of the brain.

Acute Poliomyelitis of Brain Stem.—The case described by von Kiss and Hechst was one of the so-called pontine type of poliomyelitis. It was of interest because of the diagnostic difficulties it presented and because its histologic aspects illustrate the significance of system electivity. The disorder began with high fever, pains in the neck and diplopia. On the third day the child was brought to the clinic, and at this time there existed cerebellar ataxia, meningeal symptoms and ptosis with paresis of the ocular muscles. A meningeal process could be excluded on the basis of the examination of the cerebrospinal fluid. The author discusses the differentiation from influenzal encephalitis and from epidemic encephalitis. The patient died and the postmortem diagnosis was based on the intensity of the histologic processes and on the diffusion of the changes in the nerve cells. The essential feature of the histologic picture was the destruction of cells in certain motor nuclei, which proved the so-called neurotropic system electivity.

Wiener klinische Wochenschrift, Vienna

47: 641-672 (May 25) 1934

Diabetic Coma. H. Schwarz.—p. 641.
*Predominant Significance of Hereditary Factor in Development of Chronic Phthisis in Adults Compared to So-Called Reinfection. K. Schuberth.—p. 643.
Work Tests and Electrocardiogram. I. Rosenberger.—p. 648.
Treatment of Asthma in Allergen Free Chambers According to Storm van Leeuwen. P. Habetin.—p. 651.
Occurrence of Traumatic Tetanus in Austria. H. Kunz.—p. 653.
*Plastic Repair of Roof of Acetabulum in Case of Defective Hip Joints. H. Spitzy.—p. 655.
*Complete Removal of Breast or Radical Excision of Tumor in Case of Mammary Carcinoma. W. Goldschmidt.—p. 656.
Therapy of Genital Prolapse. P. Werner.—p. 659.
Fever Therapy. O. Kauders.—p. 662.

Hereditary Factor in Tuberculosis.—Studies on a material of 600 tuberculous patients revealed to Schuberth that in 64 per cent a hereditary factor was involved. He thinks that in the other patients a massive tuberculous infection during childhood was responsible for the development of the tuberculosis. Children from tuberculous parents contract tuberculosis much easier than children from healthy parents. The author concludes that, from the eugenic point of view, propagation is inadvisable not only when either the man or the woman has tuberculosis but also when they descend from a tuberculous family.

Plastic Repair of Congenital Luxation of Hip Joint.—Spitzy states that the method, which he first employed in 1921, was carried out in the following manner: After bloodless reposition of the head of the femur and after exposure of the acetabulum by Hoffa's incision, the upper or the posterior rim of the acetabulum is laid free. Then a slit 2 cm. in depth is made with the aid of a fine chisel into the pelvic bone, obliquely from below upward. Into this slit is driven a bone splinter, 5 cm. in length, taken from the contralateral tibia. The joint is fixed by a well fitted plaster-of-paris cast left on for from three to four months. It was found that in the course of the years the bone splinter became thicker, so that finally it grasped like a hand and thus gave the head a firm hold. It is essential for the success of the treatment that the splinter be as wide as possible. If one splinter proves insufficient, a second one may be driven in at once or later. In the course of the years the author employed the method in forty-five cases and simplified it so that now it can be done almost subcutaneously and can be employed even in small children. This he considers an especial advantage of his method.

Removal of Breast or Radical Excision of Malignant Tumor.—Goldschmidt points out that some authorities recommend the complete removal of the breast and others irradiation only, some a radical operation combined with irradiation and others simple excision of the primary tumor from the breast and subsequent application of rays to the lymph vessels and glands. The latter method avoids the mutilation to which many women refuse to submit, and it takes account of the progress in irradiation therapy. The author employed this method in fifty-one cases. His observations indicate that the less differentiated forms of carcinoma are more suitable for this form of treatment than are the more highly differentiated forms. He does not consider completely solved the problem as to when complete removal is necessary and when a more conservative method may be employed and he admits that further studies will be necessary to decide where the line should be drawn between total removal of the breast and simple excision with subsequent irradiation. He reports a case in which total removal was urged but rejected and the subsequent development showed that total resection should have been done. He concludes that if proper use is made of the progress in ray therapy and if the histologic structure of the mammary carcinoma is given consideration it will not be necessary to resort to the mutilating radical operation in all cases. Observations that he made in the course of eight years with the less radical operation seem to indicate early excision of the primary tumor, and, if they are involved, removal of the axillary lymph nodes through a different incision, but during the same session, and subsequent irradiation if the histologic examination reveals a solid cancer of a lower stage of differentiation. If the cancer proves to be a highly differentiated one, radical removal would of course be preferable.

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58: 1201-1264 (May 26) 1934

Delivery in Old Primiparas. F. von Mikulicz-Radecki.—p. 1202.
*Chorio-Epithelioma and Aschheim-Zondek Reaction. H. Schwalm.—p. 1212.
*Connection Between Hypophysis and Genital Carcinoma. O. Busse and Hoevener.—p. 1218.
Experiences with Weltmann's Coagulation Band in Gynecology. Henriette Ypsilanti and L. Kyriakis.—p. 1222.
Abdominal Speculum Frame. K. Holzapfel.—p. 1224.

Chorio-Epithelioma and Aschheim-Zondek Reaction.—Schwalm relates the history of a woman in whom, in the absence of clear clinical symptoms, the Aschheim-Zondek test of the urine aided in corroborating the suspicion of the presence of chorio-epithelioma so that surgery was resorted to early enough. He emphasizes that the test is valuable not only in the diagnosis of chorio-epithelioma but also in ascertaining the efficacy of the treatment and in the early detection of metastases.

Connection Between Hypophysis and Genital Carcinoma.—Busse and Hoevener point out that some authorities, particularly Hofbauer, assume a connection between hypophysis and genital carcinoma. In experiments on guinea-pigs this author noted that after the administration of the hormone of the anterior lobe of the hypophysis certain changes developed in the vaginal portion of the uterus, and he considered these changes precancerous proliferations of the epithelium. He also made observations on castrated guinea-pigs, into which anterior hypophyseal tissue had been implanted, and maintained that the same changes took place. In order to verify these results, the authors duplicated his studies on forty sexually mature female guinea-pigs. The animals were castrated and then portions from the anterior hypophysis of hogs were implanted. A considerable number of animals served as controls. In summing up their observations the authors state that they never observed precancerous proliferations of the epithelium and that control animals showed the same changes as the animals which had been given implantations. Administration of the hormone of the anterior lobe of the hypophysis likewise caused no changes in the genitalia of castrated guinea-pigs.

Klinicheskaya Meditsina, Moscow

12: 497-674 (No. 4) 1934. Partial Index

Etiology, Pathogenesis and Symptomatology of Rheumatic Infection. E. I. Tsukershteyn.—p. 497.
*Procaine Hydrochloride Blocking of Nervous System as Method of Influencing Trophic and Inflammatory Processes in Tissues. A. V. Vishnevskiy.—p. 514.
Method of Determining Working Capacity of Muscle and of Heart Muscle in Particular. N. A. Kabanov.—p. 526.
Functional Evaluation of Circulatory Failure by Determination of Glycemic Curve. O. Sokolnikov, A. Lukovataya and M. Tolgskaya.—p. 539.
*Pathogenesis and Classification of Rheumatic Disturbances. Ya. B. Eyger.—p. 548.
Pathogenesis of Polyarthritis. L. Ya. Stefanenko.—p. 565.

Method of Influencing Trophic Processes.—Vishnevskiy treated sixty-one patients presenting chronic, callous ulcers of the extremities by the method of procaine hydrochloride block of the nervous system. In fifty-one the ulcers healed promptly and remained healed during the following year. Twelve patients having spontaneous gangrene of the extremities were submitted to the same treatment. The results were strikingly good. Of these, six were permanently cured; six had a recurrence which, however, yielded to repeated injections. In two the process was not influenced and amputation became necessary. The method consisted of injecting from 50 to 60 cc. of 0.25 per cent solution of procaine hydrochloride into the renal fascia (lumbar anesthesia) or of a circular block of the thigh the needle reaching down to the bone, utilizing from 200 to 250 cc. of the solution of procaine hydrochloride. The author obtained the same effect when lumbar block was carried out on the side opposite that of the diseased extremity. It appeared that fractional stimulation of the nervous system by procaine hydrochloride was capable of changing the condition of the entire nervous system, as a result of which the local pathologic process was influenced. The recent concept of the gastroduodenal ulcer as a neurotrophic lesion suggested to the author the rationale of applying his method of nerve blocking to this disease as well. In forty-six cases presenting ulcerative disease of the stomach or duodenum, the results were good. The author likewise applied this method in the treatment of acute inflammatory processes. He was able to show in a number of cases that injection of an anesthetic fluid into an inflamed area is, contrary to the old notion, entirely free from any danger. The most striking effect noted was the disappearance of the inflammatory edema. This was so constant as to suggest that edema is a neutrotrophic disturbance. Excellent results were obtained in the treatment of carbuncles, erysipelas and various other acute and chronic inflammations.

Pathogenesis of Rheumatic Disturbances.—Eyger reviews the existing theories with regard to the pathogenesis of rheumatic disease. On the basis of the work of Klinge and of Weintraud, as well as his own clinical experience, he accepts the concept of rheumatism as an allergic disease. According to this concept the organism is first sensitized by foreign proteins of bacterial or other origin, both exogenous and endogenous. Certain agencies, such as chilling or dampness, innocuous to a healthy organism, produce in the sensitized organism morbid processes of the most varied type and localization, such as eczema, bronchial asthma and rheumatism. The allergic process may for a time fail to localize itself and may cause a febrile state, the so-called rheumatic fever. At some later time the characteristic alterations in organs will manifest themselves. The rheumatic process attacks the mesenchymal tissue, the joints and the muscles, the heart and the blood vessels, the serous surfaces, the brain and the peripheral nerves, the skin and the larynx. The reason for particular localization in any given organ is not known. It may have something to do with overwork. The author proposes a classification that embraces the various rheumatic manifestations.

Acta Medica Scandinavica, Stockholm

82: 193-393 (May 24) 1934

Sugar Threshold and Renal Function. T. Bjering and P. Iversen.—p. 193.
*Elimination of Urea and Renal Function. T. Bjering.—p. 213.
*Sugar Threshold and Renal Function. T. Bjering and P. Iversen.—p. 228.
*Current Potential in Circulation and Its Significance in Pathogenesis of Hypertension. F. Leiri.—p. 251.
Coagulation of Blood. F. Leiri.—p. 268.
*Relationship Between Plasma Proteins and Bone Marrow, as Illustrated in Different Cases of Bone Marrow Tumors. A. H. Johansen.—p. 276.
Free Hydrochloric Acid in Stomach in Pernicious Anemia. G. Alsted.—p. 288.
Zoster and Tuberculosis of Spine. M. Kobro.—p. 300.
Cause of Alimentary Glycosuria in Acute Infectious Diseases. N. A. Nielsen.—p. 306.
Clinical and Experimental Studies of Gastric Juice. E. Thomsen.—p. 311.
Residual Reduction of Blood in Puerperium. E. Brandstrup.—p. 329.
Rudimentary Hyperesthetic Zones of Abdomen. H. I. Bing.—p. 338.
Function of Liver in Galactose and Amino Acid Tolerance Tests. E. Gottlieb.—p. 342.
Presence of Antianemic Factor in Preparations of Dried Stomach Substance from Cardia, Fundus and Pylorus, Respectively. E. Meulengracht.—p. 352.
Pepsin and Rennin Activity of Preparations of Dried Stomach from Cardia, Fundus and Pylorus Respectively. E. Meulengracht and E. Schiødt.—p. 375.
Topographical Distribution of Glands of Cardia, Fundus and Pylorus in Stomach of Pig. E. Meulengracht and A. S. Ohlsen.—p. 384.

Elimination of Urea and Renal Function.—Bjering discusses the urea test of Addis and the creatinine test of Rehberg. The first determines the urea clearance and the second is based on the filtration-resorption theory. The author found that within a fluctuation of from 10 to 150 of the creatinine concentration, and a fluctuation of from 13 to 90 mg. per hundred cubic centimeters of the blood urea, there is a constant relation between the concentration index for urea and for creatinine. He reaches the conclusion that in the clinic the clearance test is superior to the filtration test, not only because the determination of the urea belongs to the routine laboratory work but also because it is probably more reliable than the determination of creatinine, which necessitates a certain experience in the use of the colorimeter and a rather expensive equipment.

Sugar Threshold and Renal Function.—Bjering and Iversen relate the following observations: 1. The sugar resorption decreases only relatively according to the increasing sugar concentration in the blood. 2. There exists a linear correlation between the sugar content of the resorbed fluid and that of the blood. 3. With the same blood sugar content, the sugar solution absorbed by the kidney has a lower concentration in case of a decreasing blood sugar curve than in case of an increasing one. 4. Sugar content and total elimination of sugar in the urine are dependent on the blood sugar and on the concentration index. If the latter is kept constant, a parallelism may be produced between the sugar in the urine and the sugar content of the blood. 5. In acidosis the tubules are poisoned, with the result that the resorbed sugar solution becomes weak. 6. If the sugar content of the resorbed fluid remains for some time the same as the sugar content of the blood, the sugar content of the urine will be found to be the same. 7. The elimination of increasing quantities of sugar is accompanied by a decreasing concentration index. 8. The same person eliminates under identical conditions the same quantity of sugar.

Current Potential in Circulation and Pathogenesis of Hypertension.—Leiri shows that a current potential develops in the circulation and that it presents a resistance in the movement of the blood through the arteries. Changes that could produce an increased current potential have been observed in the blood and in the vascular wall of patients having hypertension, and it is possible that this plays a part in the pathogenesis of hypertension. This possibility is indicated by the favorable effect produced by carbon dioxide baths and by the inhalation of air with a negative electric charge.

Relationship Between Plasma Proteins and Bone Marrow.—Determinations of the total protein and the more important fractions of protein in the plasma were made by Johansen in a series of patients who had diseases in the bone system. In primary tumors of the bone marrow, i. e., myelomas, greater variations were found in the plasma proteins than in cases of metastatic tumors of the bone system, although the distribution, the roentgenologic and other clinical features were nearly identical. The observations led the author to believe that there is a relationship between the maturity of the tumor cells in the bone marrow and the proportionate qualitative and quantitative changes of the plasma proteins.

Norsk Magasin for Lægevidenskapen, Oslo

95: 465-672 (May) 1934. Partial Index

*Internal Treatment of Gastric and Duodenal Ulcer. H. G. Dedichen.—p. 465.
*Result of Medical Treatment and Indications in Chronic Gastroduodenal Ulcers. A. Jervell.—p. 478.
*Indications for Treatment of Gastric and Duodenal Ulcers. J. Holst.—p. 515.
*Operative Treatment of Gastric and Duodenal Ulcers. K. Nicolaysen.—p. 533.
*Results of Necropsy in Fatal Hemorrhage from Gastric and Duodenal Ulcers. E. Hjort.—p. 542.
*Anemia in Patients After Operation on Stomach. J. Dedichen.—p. 565.
*Clinical and Roentgenologic Study on Results of Internal Treatment of Gastric and Duodenal Ulcers. T. Dale and H. G. Dedichen.—p. 585.

Internal Treatment of Gastric and Duodenal Ulcer.—Dedichen states that after-examination with roentgenologic control in thirty-two patients with roentgenologically established gastric or duodenal ulcer, treated medically from 1926 to June 1931, showed satisfactory results in about 50 per cent, the results being slightly better for gastric than for duodenal ulcers. Recurrence was most frequent in men doing heavy physical work, often also under poor economic conditions. One of the most important factors in internal therapy is the management of the after-treatment. Internal treatment of ulcers deserves a larger place than it has held during the last twenty years, and the results of the treatment are and can be better than is generally acknowledged. The failure of internal treatment is most often due to too late diagnosis or to defective management of the treatment, particularly the after-treatment.

Medical Treatment of Chronic Gastroduodenal Ulcers.—Jervell concludes from statistics on the end-results of medical treatment that good results can be counted on in from 40 to 50 per cent of the cases treated. He is inclined to consider early diagnosis and start of treatment the important feature in the treatment of ulcers and one too little emphasized, but he says that even after symptoms of more than twenty years' duration medical treatment may be effective, and niches apparently due to callous and penetrating ulcers not infrequently disappear under it. In after-treatment, economic conditions play a part. Statistics are presented to show that there is no great danger of perforation in the further course of chronic gastroduodenal ulcers, except in special cases in which there are painful ulcers on the anterior wall. The danger of hemorrhages after medical treatment is also slight. Mattisson's report in 1931 on after-examination in 1,491 cases of gastroduodenal ulcers showed that of 178 fatal cases twenty-three, or 1.41 per cent, were due to hemorrhage. Prophylactic operation could have been done only in ten, or 0.76 per cent, of the 1,491. Repeated grave hemorrhages are considered a weighty indication for surgical treatment. The author finds greater significance attached to erroneous diagnosis of callous ulcer when cancerous ulcer is present than to the actual development of cancer from the ulcer. The least suspicion of cancer or perforation indicates operation. Pyloric stenosis and hourglass stomach afford strong indication for operation; but, as the part played by the spastic factor is uncertain, medical treatment is worth trying. In acute hemorrhage from ulcers, internal treatment seems safer than operative treatment; but, in the more oozing chronic bleeding, surgical intervention must not be too long delayed. Before operation for gastroduodenal ulcers, medical treatment should be tried. He regards two carefully performed courses of treatment with necessary after-treatment as the minimum requirement.

Indications for Treatment of Gastric Ulcers.—Holst asserts that internal treatment and surgical treatment of ulcers do not compete but supplement each other. Surgical indications are present only in cases of definite complications. Except in cases of perforation he never operates for gastric or duodenal ulcer unless the ulcer is roentgenologically confirmed. Of 305 cases of gastric and duodenal ulcer in which operation was performed between 1919 and 1933, gastro-enterostomy was done in 136, and resection in 169. Mild cases of gastric anemia, readily influenced by iron medication, were frequently observed after resection. The decisive factor in the choice between gastro-enterostomy and resection must be the end-results. Late complications are more frequent and more grave after gastro-enterostomy than after resection, and the study of the "pathology of the operated stomach" in cases from various Norwegian hospitals shows resection, with extirpation of the ulcer, to be superior to gastro-enterostomy.

Operative Treatment of Gastric and Duodenal Ulcers.—Nicolaysen says that the association of gastritis with peptic ulcers is less frequent in Norway than in central Europe, but more frequent than in the United States. He considers gastro-enterostomy indicated in pyloric stenosis with large retention and dilatation of the stomach, irrespective of age. As a general rule, gastro-enterostomy should be the method after 45; in women and in cases of gastric ulcer the age for gastro-enterostomy can apparently be put slightly lower without special danger of jejunal ulcer. In resection he uses the anterior no loop as easier than posterior anastomosis and always removes more than one third of the stomach. Transient stomach retention in the first days after operation is frequent. The achylic anemia following operation yields to iron medication. He recommends operation in repeated, more massive hemorrhages and in a single massive hemorrhage due to chronic ulcer, in which, as also in all cases of suspected cancer, he prefers resection to gastro-enterostomy irrespective of age. In operative treatment indicated because of chronic symptoms, resistance to dietetic treatment, and for economic or geographic reasons, he prefers resection in all patients under 40, especially in men, in duodenal ulcers, and in high acid values and gastritis. With gastro-enterostomy mainly for older persons and resection for the younger, he considers resection a relatively safe operation, when well done, and offering far greater certainty of good results. In technically difficult cases, gastro-enterostomy is advised. In all diagnosed cases of ulcer, one regular course of dietetic treatment should first be given. In every case of gastric ulcer which after this treatment shows a roentgenologic niche, operation should be done, and in every case of duodenal ulcer, even with niche, continued diet may be advised if the patient can with a relatively liberal diet remain free from symptoms. He emphasizes the need for individualized treatment in each case of gastroduodenal ulcer.

Necropsy in Fatal Hemorrhage from Gastric and Duodenal Ulcers.—Out of 4,460 necropsies, Hjort found gastric and duodenal ulcers in 108 cases (2.45 per cent), with fatal hemorrhage in twenty-two (20 per cent) of these (nineteen from gastric, three from duodenal ulcers). According to the local results of necropsy, fourteen cases seemed to be in an operable condition, five in an inoperable condition and three doubtful; on the basis of the general results, about one half seemed in an operable condition. Attention is called to the operative difficulty in case of arrosion of the splenic artery. Thirteen cases of gastric and duodenal hemorrhages not due to round ulcer are also reported. While the material supports the view that selected patients having acute grave hemorrhages from gastric and duodenal ulcers may be successfully operated on, the author emphasizes that the general results in half of the cases revealed pronounced vascular and organic disorders.

Anemia in Patients After Operation on Stomach.—Dedichen's investigations show anemia, usually of secondary type, sometimes of pernicious type, after resection of the stomach, mainly according to Polya. The tendency to anemia in achylia following operation is greater than in spontaneous achylia, and anemia may appear without postoperative achylia. The anemia cannot therefore depend only on the achylia. Possibly the excision of so large a part of the stomach is a factor, and perhaps also the rapid emptying of the stomach with consequent abnormal loading of the upper intestine. It seems, at all events, justifiable in choice of operative method, especially in younger women, to bear the postoperative anemia in mind.

Results of Internal Treatment of Gastric and Duodenal Ulcer.—Dale and Dedichen describe the clinical and roentgenologic results before and after treatment in twenty-eight cases. The ulcer niche usually disappeared after from four to six weeks, but some cases with a large niche required from two to four weeks more. Recovery was seen in old patients with large ulcers. After-examination in forty-five patients from two and a half to eleven years after treatment showed recovery in about one half of the cases, including cases with history of ulcers for from ten to thirty-two years and roentgenologically large niches.